



U.S. ARMY  
MATERIEL COMMAND

— COMMITTED TO PROTECTION OF THE ENVIRONMENT —

FINAL PHASE II  
DATA ADDENDUM  
SITE 36-7: SOLID WASTE BURIAL/SANITARY PI

September 1988  
Contract Number DAAK11-84-D-0016  
(Version 3.1)

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PREPARED BY  
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U.S. ARMY PROGRAM MANAGER'S OFFICE FOR THE ROCKY MOUNTAIN ARSENAL

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# TABLE OF CONTENTS

Section	Page
1.0 PHASE II PROGRAM	1
2.0 PHASE II FIELD OBSERVATIONS	5
3.0 PHASE II GEOPHYSICAL EXPLORATION	9
4.0 PHASE II ANALYTE LEVELS AND DISTRIBUTION	10
5.0 REFERENCES	25

## APPENDICES

36-7-II-A -- CHEMICAL NAMES, METHODS, AND ABBREVIATIONS  
36-7-II-B -- PHASE II CHEMICAL DATA

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## LIST OF TABLES

Table		Page
36-7-II-1	Summary of Pit Boring Activities and Observations	7
36-7-II-2	Summary of Analytical Results for Site 36-7 Phase II Soil Samples	11
36-7-II-3	Concentrations of Target Analytes Above Detection Limits in Site 36-7 Soil Samples	12
36-7-II-4	Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples	20

LIST OF FIGURES

Figure		Page
36-7-II-1	Disposal Trench Exploration Investigation, Phase II Results, Site 36-7	6
36-7-II-2	Site 36-7, Phase I and Phase II Investigations, Chemical Analysis Results	17

9/12/88

**SITE 36-7: SOLID WASTE BURIAL/SANITARY PIT****1.0 PHASE II PROGRAM**

As a result of the Phase I Contamination Assessment at Rocky Mountain Arsenal (RMA), a Phase II program was initiated at Site 36-7 in February, 1988. The Phase II Program was generally conducted as presented in the Phase I Contamination Assessment Report (CAR) (ESE, 1988, RIC#8806^R07), except that only six samples of trench material were obtained instead of the eight samples planned.

The Phase II investigation of Site 36-7 consisted of 8 pit borings yielding 22 samples and 22 soil borings yielding 40 samples. Pit boring locations were selected to explore potential disposal trenches, and soil boring sites were selected to investigate the remaining areas within Site 36-7. Observation pits were excavated with a backhoe in the eight suspected disposal trenches as defined by geophysical anomalies, interpretation of aerial photography, and review of historical data. Each pit was excavated to the trench bottom, as determined by visual inspection. A grab sample believed to be representative of the most contaminated material within the trench was obtained from excavated material. The pit was backfilled with clean (metal free) material, and the location was staked. The pit borings were drilled 5 feet (ft) below the base of the suspected disposal trench and sampled at the 0- to 1- and 4- to 5-ft intervals below the base.

A continuous shallow trench was excavated with a backhoe in the southernmost anomaly to identify the locations and orientations of suspected disposal trenches and to allow observation pits and pit borings to be targeted more accurately.

All soil samples (except for grab samples) were collected using the continuous soil sampling method detailed in the Task 1 Technical Plan (ESE, 1985, RIC#85127R07). Samples were obtained at predetermined intervals unless field conditions (e.g., depth to water table, staining, etc.) necessitated adjustment in the interval selections. Seven 1-ft-deep borings were drilled and sampled using hand-auger equipment. Locations of the observation pits and pit borings are shown on Figure 36-7-II-1 (See Section 2.0),

and locations of all Phase II borings are shown on Figure 36-7-II-2 (See Section 4.0).

The actual Phase II investigation varied from the proposed Phase II program in that only six grab samples of disposal trench material were obtained instead of the eight samples planned. A grab sample from Pit Boring 3682 was not obtained, because only natural soil and bedrock were encountered at that location. A grab sample from Pit Boring 3687 was not obtained, because the excavation caved and resulted in unsafe conditions for equipment and personnel. Boring 3687, however, was drilled through the trench material. The depth of the trench was determined from Boring 3687, and soil samples were obtained from beneath the trench.

Prior to any Phase II drilling, the Program Manager's Office (PMO), Environmental Science and Engineering (ESE), Morrison-Knudsen Engineers (MKE), and Harding Lawson Associates (HLA) formulated procedures for MKE to obtain subsamples from selected soil cores during Phase II drilling. MKE did not request subsamples at Site 36-7.

The following table summarizes the Phase II investigation at Site 36-7:

Boring No.	Total Depth (ft)	Sampling Interval(s)	No. of Samples
3683*	10	5-6, 9-10	2
3684*	15	2-3 <sup>+</sup> , 10-11, 14-15	3
3685*	17	7-8 <sup>+</sup> , 10-11, 15-16	3
3686*	15	7-8 <sup>+</sup> , 10-11, 14-15	3
3687*	22	17-18, 21-22	2
3688*	14	5-6 <sup>+</sup> , 9-10, 13-14	3
3689*	16	3-4 <sup>+</sup> , 11-12, 15-16	3
3690*	15	4-5 <sup>+</sup> , 10-11, 14-15	3
3691	5	0-1, 4-5	2
3692	5	0-1, 4-5	2
3693	5	0-1, 4-5	2
3694	5	0-1, 4-5	2
3695	5	0-1, 4-5	2
3696	5	0-1, 4-5	2
3697	5	0-1, 4-5	2
3698	5	0-1, 4-5	2
3699	5	0-1, 4-5	2
3700	1	0-1	1
3701	1	0-1	1



9/14/88

3702	1	0-1	1
3703	1	0-1	1
3704	1	0-1	1
3705	1	0-1	1
3706	1	0-1	1
3707	10	0-1, 4-5, 9-10	3
3708	10	0-1, 4-5, 9-10	3
3709	10	0-1, 4-5, 9-10	3
3710	3	0-1, 2-3	2
3711	3	0-1, 2-3	2
3712	3	0-1, 2-3	<u>2</u>
Total			62

\* Pit boring

+ Grab sample of trench material

The Phase II analytical program was conducted as planned with the exception of the grab samples from Borings 3683 and 3687, which were not collected. Fifty-six samples were analyzed for semivolatile organic (SVO) compounds by gas chromatography/mass spectrometry (GC/MS) and for arsenic and mercury by atomic absorption (AA). Sixty-two samples were analyzed for cadmium, chromium, copper, lead, and zinc by the inductively coupled argon plasma (ICP) method. The 4-to 5-ft samples below the base of disposal trenches from Borings 3683 to 3690 and the 9- to 10-ft samples from Borings 3707 through 3709 were analyzed for volatile organic (VO) compounds by GC/MS. Six samples were analyzed by high-performance liquid chromatography (HPLC) for the Army Agent Degradation Products (ADP) thiodiglycol (TDGCL) and chloroacetic acid (CLC2A), and by ion chromatography (IONCHROM) for fluoroacetic acid (FC2A), isopropylmethyphosphonic acid (IMPA), and methylphosphonic acid (MPA).

The six samples from the Phase II borings triangulated around Phase I Boring 3111 were analyzed for ICP metals to investigate the elevated cadmium in Boring 3111. The remaining samples were analyzed for the Phase I suite of analytes, because Phase I samples were not collected in the geophysical anomalies and disposal trenches investigated in the Phase II program. Selected Phase II samples were also analyzed for IMPA and TDGCL to screen for ADPs, as the HPLC and IONCHROM methods were not available during the Phase II program.

Phase I and Phase II analytical methods for Site 36-7 samples were the same for VO and SVO compounds, ICP metals, arsenic, and mercury; therefore, Phase I and Phase II results are directly comparable. Appendix 36-7-II-A provides a complete list of analytes, analytical methods, and standard abbreviations used in the Phase I and Phase II investigations.

9/12/88

## 2.0 PHASE II FIELD OBSERVATIONS

Surface conditions at Site 36-7 have not changed appreciably since the Phase I investigation was completed in the summer of 1985 (ESE, 1988, RIC#88063R07). Figure 36-7-II-1 shows the locations of excavated pits and trenches, excavation depths, trend outlines of possible disposal trenches as interpreted from aerial photographs, actual widths of intercepted disposal trenches, and a cross section showing the continuous shallow excavation profile with the intercepted disposal trenches projected onto the cross section. Table 36-7-II-1 presents a summary of pit excavation activities and observations.

Ground water was not encountered at any of the Phase II pits or borings at Site 36-7. Volcaniclastic bedrock was encountered in seven of the eight pit borings. Bedrock depths are presented on Table 36-7-II-1.

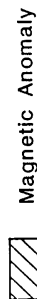
For safety purposes, air monitoring was conducted using a photoionization detector (PID) during drilling and excavation activities. In general, PID readings in the auger annulus and open trenches were background except in Pit Boring 3687, which registered a PID reading of 13.2 in the hollow-stem annulus at the 16- to 18-ft depth, and Boring 3698, which had a PID reading of 24 in the 0- to 1-ft sample. PID readings were at background levels in the breathing zone during field activities.

An M18A2 test kit was used to detect the presence of chemical agents in trenches, boreholes, and soil samples. Specifically at RMA, the M18A2 test kit is used to detect Sarin (GB), nerve agent (VX), mustard (H), and Lewisite (L), based on the knowledge that these agents were manufactured, stored, or demilitarized at the site. The detection limit for mustard agents is 0.5 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ), and the detection limit for GB, VX, and L is 0.2  $\text{mg}/\text{m}^3$ . The detection limits for L and VX in soil are 5 and 5.9 parts per million (ppm), respectively. All M18A2 field test results for chemical agents at this site were negative.

# **LEGEND**

- Excavation Location
- Depth to Bottom of Disposal Trench Material
- Intercepted Buried Trench
- Possible Trench Boundary Inferred from Aerial Photography
- 3688\* Refer to Table 36-7-II-1, for Description of Disposal Trench Contents
- Geophysical Anomaly; A, B, C, etc.

## **GEOPHYSICAL KEY**



Magnetic Anomaly

Combined Electromagnetic and Magnetic Anomaly

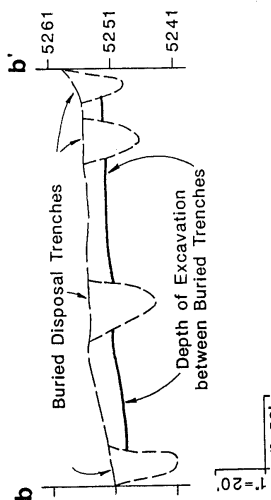
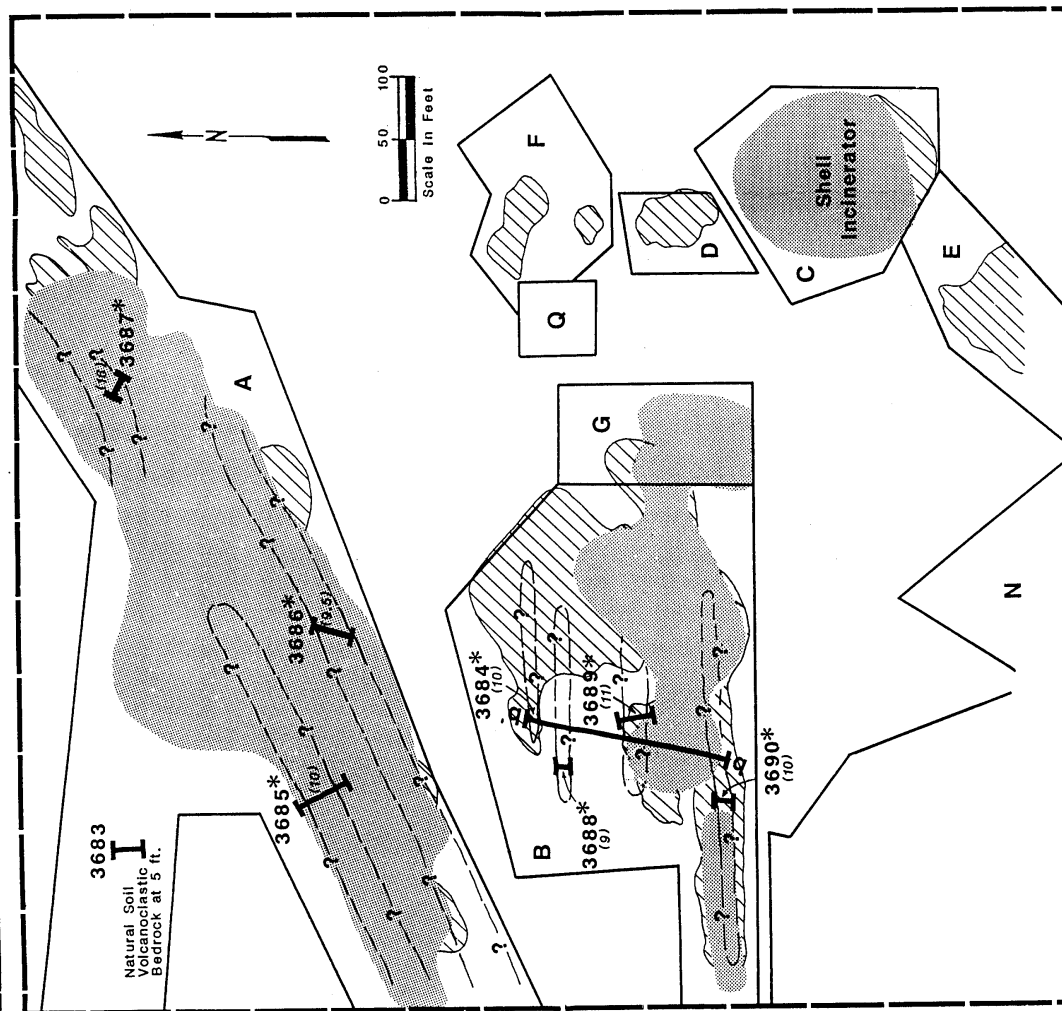


Figure 36-7-II-1  
SITE 36-7, TRENCH EXPLORATION INVESTIGATION  
PHASE II RESULTS

SOURCE: HLA, 1988

Prepared for:  
U.S. Army Program Manager's Office  
For Rocky Mountain Arsenal  
Aberdeen Proving Ground, Maryland

Table 36-7-II-1. Summary of Pit Boring Activities and Observations

Pit Boring No.	Disposal Trench Depth (ft)	Pit Boring Depth (ft)	Disposal Trench Contents	Comments
3683	Trench not encountered	10	None	Volcaniclastic bedrock at 5 ft
3684	10	15	Paper, plastic, metal, lumber	Siltstone/volcaniclastic bedrock at 12.5 ft
3685	10	17	Plastic pipe, scrap metal, wood	Volcaniclastic bedrock at 9.5 ft
3686	9.5	15	Paper, cans, respirators, M-19 casings, scrap metal	Volcaniclastic bedrock at 9.2 ft
3687	16*	22	Paper, lumber, plastic	Excavation pit abandoned due to severe instability
3688	9	14	Paper, lumber, plastic	Volcaniclastic bedrock at 10.4 ft
3689	11	16	Old tires, automotive trash	Volcaniclastic bedrock at 15.5 ft
3690	10	15	Paper, wood, plastic	Volcaniclastic bedrock at 10 ft

\* Estimated from soil core obtained during drilling

Source: ESE, 1988.

9/12/88

Samples at Site 36-7 were also tested for chemical agents by the RMA laboratory, because historical evidence indicated possible agent presence. A composite of aliquots from each sample was initially analyzed for GB, VX, H, and L. If agent had been detected, individual samples from each boring would have been analyzed to identify stratigraphic location. No positive results for chemical agents were found at this site.

9/12/88

### 3.0 PHASE II GEOPHYSICAL EXPLORATION

No geophysical survey was conducted at Site 36-7 for the Phase II investigation. Fifteen boring locations were cleared, however, for safety purposes in accordance with the borehole clearance geophysical program detailed in the Task 1 Technical Plan (ESE, 1985, RIC#85127R07). Borehole site clearance was used to ensure that drilling would not encounter buried unexploded ordnance or other metal that could pose a significant safety risk. Magnetic intensity readings were obtained with a gradiometer. A 20-ft-square grid was centered at each boring location, and gradiometer readings were obtained at 5-ft intervals throughout the area. A contour map was prepared from the data and was used to place the boring in the safest location within the geophysical plot. Following borehole site clearance, a metal detector was used to check for surficial (0 to 2 ft) metal. None of the 15 borings were relocated as a result of the borehole site clearance conducted at Site 36-7.

The seven hand-augered boring locations were cleared by a metal detector survey for shallow (0 to 2 ft) buried metal. None of these borings had to be relocated after the metal detector survey.

#### 4.0 PHASE II ANALYTE LEVELS AND DISTRIBUTION

Table 36-7-II-2 contains indicator ranges and a statistical summary of Phase II analytical results. A summary of analytical data for each sample, including lithology and air monitoring results, is presented in Table 36-7-II-3. A tabulation of all analytical data associated with the Phase II investigation at this site is presented in Appendix 36-7-II-B.

To assess the significance of metal and organic analytical values, indicator ranges were established during the Phase I program. For organic compounds, the indicator level is the method detection limit. For metals, a range of values was chosen to reflect the upper end of the expected natural range for each metal as normally found in RMA alluvial soil. The procedure for establishing indicator ranges is presented in the Introduction to the Contamination Assessment Reports (ESE, 1987, RIC#88204R02). Concentrations within or above indicator ranges for Phase I and Phase II data are presented in Figure 36-7-II-2.

Eleven samples were analyzed for VO compounds; the only target compound detected was methylene chloride in two samples at low concentrations (Boring 3684, 14 to 15 ft, 1 ppm; Boring 3690, 14 to 15 ft, 0.7 ppm). Fifty-six samples were analyzed for SVO; dieldrin was the most prevalent compound detected with concentrations ranging from 0.3 to 10 parts per million (ppm) in 8 samples. Four samples contained chlorophenylmethyl sulfone (CPMSO<sub>2</sub>) at concentrations ranging from 0.7 to 2 ppm. Isodrin, endrin, chlorophenylmethyl sulfide (CPMS), and chlorophenylmethyl sulfoxide (CPMSO) were each detected in one sample.

Four of the dieldrin detections, the endrin detection (1 ppm), and the isodrin detection (0.5 ppm) were found in samples from the pit borings. Phase II results showed a dieldrin detection of 10 ppm in the grab sample from the 2-to 3-ft interval of Pit Boring 3684. Lower levels of dieldrin were detected in Pit Borings 3686 (1 ppm, 7- to 8-ft interval), 3688 (0.4 ppm, 5- to 6-ft interval), and 3691 (2 ppm, 0- to 1-ft interval). The highest concentration was detected in Pit Boring 3684, which is approximately 50 ft northwest of Boring 3113. As noted in Table 36-7-II-1, Pit Boring 3684 (2- to 3-ft interval) was sampled from a buried disposal trench containing paper, lumber, metal, and plastic.



Table 36-7-11-2. Summary of Analytical Results for Site 36-7 Phase 11 Soil Samples

Constituent	Number of Samples*	CONCENTRATIONS (ug/g)					Indicator Level
		Range	Mean**	Median**	Standard Deviation**	ESE Detection Limit	
IMPA (N=6)+							
IMPA	0	--	--	--	--	2.1	DL
Fluoroacetic Acid	2	2.9-15	--	--	--	2.0	DL
MPA	0	--	--	--	--	2.0	DL
TDGCL (N=6)+							
Thiodiglycol	0	--	--	--	--	2.6	DL
Chloroacetic Acid	0	--	--	--	--	18	DL
VOLATILE ORGANICS (N=11)+							
Methylene Chloride	2	0.7-1	--	--	--	0.3	DL
SEMI-VOLATILE ORGANICS (N=56)+							
CMPS	1	8	--	--	--	0.3	DL
CMPSO	1	4	--	--	--	0.4	DL
CMPSO2	4	0.7-2	--	--	--	0.3	DL
Dieldrin	8	0.3-10	2	0.9	3	0.3	DL
Endrin	1	1	--	--	--	0.7	DL
Isodrin	1	0.5	--	--	--	0.3	DL
ICP METALS (N=62)+							
Cadmium	1	1.3	--	--	--	0.92	DL-2.0
Chromium	37	8.4-18	12	12	2.5	7.2	25-40
Copper	62	6.5-77	16	11	13	4.8	20-35
Lead	7	22-81	50	48	23	17	25-40
Zinc	62	25-250	56	44	37	16	60-80
ARSENIC (N=56)+	7	6.0-15	7.9	6.8	3.3	4.7	DL-10
MERCURY (N=56)+	14	0.054-2.1	0.38	0.11	0.64	0.050	DL-0.10

\* Number of samples in which constituent was detected. Only these sample results were used in statistical analyses.

\*\* Statistics not calculated when constituent detected in fewer than five samples.

+ Number of samples analyzed by laboratory.

DL Detection limit.

Source: ESE, 1988.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 1 of 5)

Boring Number Depth (ft) Geologic Material	3683 5-6 Volcanic- clastic (Denver Fm)	3683 9-10 Volcanic- clastic (Denver Fm)	3684 2-3 Trench Material	3684 10-11 Clayey Silt	3684 14-15 Volcanic- clastic (Denver Fm)	3685 7-8 Trench Material	3685 10-11 Volcanic- clastic (Denver Fm)	3685 15-16 Volcanic- clastic (Denver Fm)	3686 7-8 Trench Material	3686 10-11 Volcanic- clastic (Denver Fm)	3686 14-15 Volcanic- clastic (Denver Fm)	3687 17-18 Clayey Silt
AIR MONITORING												
PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	13.2
SOIL CHEMISTRY												
IMPA (ug/g)												
Fluoroacetic Acid	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ
TDGCL (ug/g)												
Thiodiglycol	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)												
Methylene Chloride	NRQ	BDL	NRQ	NRQ	1	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g)												
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	BDL	10	0.3	BDL	BDL	BDL	BDL	1	BDL	BDL	BDL
Endrin	BDL	BDL	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)												
Cadmium	BDL	BDL	BDL	BDL	BDL	1.3	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	BDL	17	9.5	BDL	12	BDL	BDL	12	BDL	BDL	BDL
Copper	34	32	25	23	51	33	35	41	18	12	20	27
Lead	BDL	BDL	42	48	BDL	61	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	67	71	76	49	87	170	65	85	62	70	55	58
Arsenic (ug/g)	BDL	BDL	7.5	BDL	BDL	7.0	BDL	BDL	BDL	BDL	BDL	BDL
Mercury (ug/g)	BDL	BDL	0.11	0.14	BDL	1.7	0.075	BDL	BDL	BDL	BDL	BDL

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BKD No reading above ambient background.

NRQ Analysis not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 2 of 5)

Boring Number Depth (ft) Geologic Material	3687 21-22 Silty Clay	3688 5-6 Trench Material	3688 9-10 Clayey Silt	3688 13-14 Volcani- clastic (Denver Fm)	3689 3-4 Trench Material	3689 11-12 Sandy Silt	3689 15-16 Silt	3690 4-5 Trench Material	3690 10-11 Volcani- clastic (Denver Fm)	3690 14-15 Volcani- clastic (Denver Fm)	3691 0-1 Silty Sand	3691 4-5 Silty Sand
AIR MONITORING												
PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY												
IMPA (ug/g)												
Fluoroacetic Acid	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	2.9 BDL	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)												
Thiodiglycol	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)												
Methylene Chloride	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	0.7	NRQ	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g)												
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	8
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	4
CPMSO2	BDL	BDL	BDL	BDL	BDL	2	2	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	0.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2	BDL
Endrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)												
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	15	BDL	BDL	BDL	14	9.9	17	9.4	12	12	12
Copper	34	77	11	41	21	13	17	20	10	15	11	9.3
Lead	BDL	BDL	BDL	BDL	81	BDL	BDL	22	BDL	BDL	BDL	BDL
Zinc	85	100	39	78	250	48	57	150	40	57	44	41
Arsenic (ug/g)	BDL	6.8	BDL	BDL	BDL	BDL	BDL	6.7	BDL	BDL	BDL	BDL
Mercury (ug/g)	0.063	0.30	0.13	BDL	0.11	BDL	BDL	BDL	BDL	BDL	BDL	BDL

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BKD No reading above ambient background.

NRQ Analysis not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase 11 Soil Samples (page 3 of 5)

Boring Number Depth (ft) Geologic Material	3692 0-1 Silty Sand	3692 4-5 Silty Sand	3693 0-1 Silty Sand	3693 4-5 Silty Sand	3694 0-1 Silty Sand	3694 4-5 Silty Sand	3695 0-1 Silty Sand	3695 4-5 Silty Sand	3696 0-1 Silty Sand	3696 4-5 Silty Sand	3697 0-1 Silty Sand	3697 4-5 Silty Sand
AIR MONITORING												
PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY												
IMPA (ug/g)												
Fluoroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)												
Thiodiglycol	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)												
Methylene Chloride	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g)												
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Endrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)												
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Copper	8.3	8.8	8.9	12	9.0	9.1	13	15	12	8.4	9.3	6.8
Lead	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	35	35	32	50	36	36	56	56	39	36	45	33
Arsenic (ug/g)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury (ug/g)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.061	BDL	BDL

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

NRQ No reading above ambient background.

NA Analysis not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase 11 Soil Samples (page 4 of 5)

Boring Number Depth (ft) Geologic Material	3698 0-1 Silty Sand	3698 4-5 Silty Sand	3699 0-1 Silty Sand	3699 4-5 Silty Sand	3700 0-1 Silty Silt	3701 0-1 Silty Silt	3702 0-1 Silty Silt	3703 0-1 Silty Silt	3704 0-1 Silty Sand	3705 0-1 Silty Sand	3706 0-1 Silty Sand	3707 0-1 Silty Sand	3707 4-5 Sand
AIR MONITORING													
PID*	24	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY													
IMPA (ug/g)													
IMPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Fluoroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)													
Thiodiglycol	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)													
Methylene Chloride	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g)													
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Endrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)													
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	9.5	BDL	11	8.8	BDL	11	12	16	10	12	BDL	11
Copper	7.4	8.9	7.7	10	9.8	8.4	12	13	8.7	11	9.3	7.0	9.4
Lead	BDL	BDL	BDL	BDL	BDL	BDL	23	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	34	39	35	44	37	28	49	46	33	52	39	25	35
Arsenic (ug/g)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	6.2	BDL	BDL
Mercury (ug/g)	BDL	BDL	BDL	BDL	0.054	0.12	0.32	0.065	BDL	BDL	BDL	BDL	BDL

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BKD No reading above ambient background.

NRQ Analysis not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase 11 Soil Samples (page 5 of 5)

Boring Number	3707	3708	3708	3709	3709	3710	3710	3711	3711	3712	3712
Depth (ft)	9-10	0-1	4-5	9-10	0-1	0-1	2-3	0-1	2-3	0-1	2-3
Geologic Material	Silty Sand	Sandy Silt	Clayey Silt	VFG Sand	Sandy Silt	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Silty Sand
<b>AIR MONITORING</b>											
PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
<b>SOIL CHEMISTRY</b>											
IMPA (ug/g)											
Fluoroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
<b>TDGCL (ug/g)</b>											
Thiodiglycol	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
<b>Volatile Organics (VO) by GC/MS (ug/g)</b>											
Methylene Chloride	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
<b>Semivolatiles Organics (SVO) by GC/MS (ug/g)</b>											
CPMS	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
CPMSO	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
CPMSO2	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Dieldrin	BDL	0.5	BDL	BDL	0.4	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Endrin	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Isodrin	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
<b>ICP metals (ug/g)</b>											
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	9.3	BDL	9.1	BDL	12	BDL	BDL	BDL	BDL	BDL	11
Copper	11	11	9.8	12	14	8.8	6.5	9.1	7.8	7.5	9.0
Lead	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	34	39	35	39	54	34	28	37	32	34	40
Arsenic (ug/g)	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Mercury (ug/g)	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

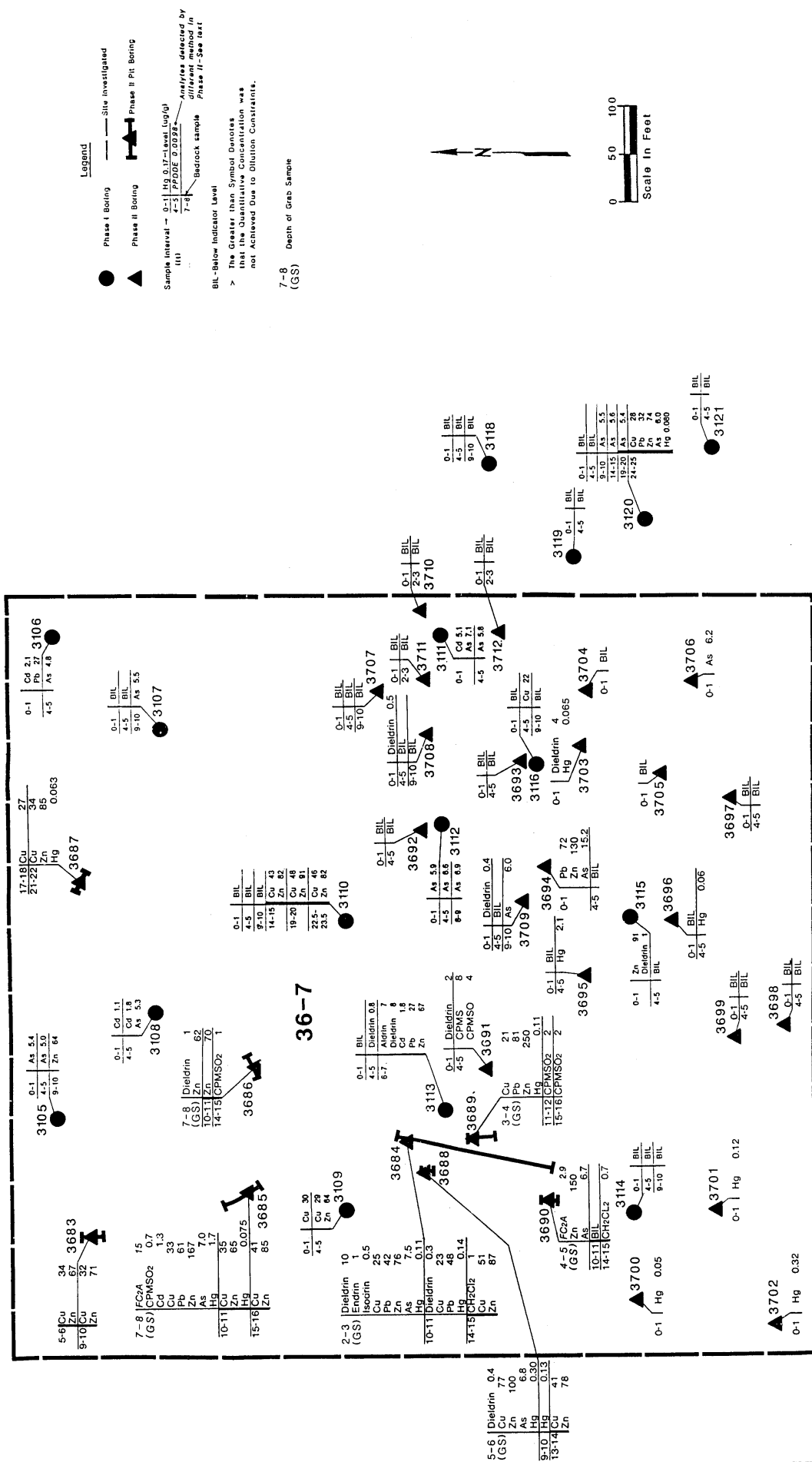
BDL Below detection limit.

NRQ No reading above ambient background.

NA Analysis not requested.

NA Not analyzed.

Source: ESE, 1988.



**Prepared for:  
U.S. Army Program Manager's Office  
For Rocky Mountain Arsenal  
Aberdeen Proving Ground, Maryland**

Figure 36-7-II-2  
SITE 36-7, PHASE I AND PHASE II INVESTIGATIONS  
CHEMICAL ANALYSIS RESULTS

**SOURCE: HLA, 1988**

9/14/88

Dieldrin was detected in the 0- to 1-ft sample interval from Boring 3703 at a concentration of 4 ppm. This boring was located adjacent to the northwest corner of the Shell incinerator. Dieldrin was also detected in Boring 3708 (0.5 ppm, 0- to 1-ft interval) and Boring 3709 (0.4 ppm, 0- to 1-ft interval). Boring 3708 is located at the intersection of the entrance to the incinerator, and Boring 3709 is in the fill area within Anomaly G.

The organosulphur compounds CPMS and CPMSO were detected at concentrations of 8 ppm and 4 ppm, respectively, in the 4- to 5-ft sample interval of Boring 3691. Four samples obtained at depths greater than 7 ft contained CPMSO<sub>2</sub> at concentrations ranging from 0.7 to 2 ppm. Three of these samples were collected below the base of suspected disposal trenches.

Of the ICP metals, cadmium, copper, lead, and zinc were detected in 1, 14, 5, and 15 samples, respectively, at concentrations within or above their indicator ranges. High concentrations of zinc, copper, and lead were detected in samples obtained from four pit borings (3684, 3688, 3689, and 3690) located in Anomaly B. With the exception of one lead and one zinc value, all of the ICP metal values within or above indicator ranges are associated with the grab samples of trench material or bedrock samples from the pit borings.

Seven of the 56 samples analyzed for arsenic were within or above the indicator range. Arsenic concentrations were in the middle of the indicator range, except Boring 3694 (0 to 1 ft) which contained arsenic at 15 ppm. Mercury was detected in 14 of 56 samples at concentrations ranging from 0.054 to 2.1 ppm. Higher mercury values are generally associated with samples obtained from the pit borings.

Grab samples from various depth intervals (see Table 36-7-II-3) were analyzed for TDGCL, IMPA, FC2A, and MPA. FC2A was detected in grab samples obtained from Pit Boring 3685 (7- to 8-ft interval) and Pit Boring 3690 (4- to 5-ft interval) at concentrations of 15.2 and 2.9 ppm, respectively.



The data reporting procedures as described in the Laboratory Quality Assurance Plan for RMA (ESE, 1985, Appendix B, RIC#85127R07) require that all analyses on a sample be completed within their respective holding time and that analytical results be corrected for percent recovery and moisture content. During routine sample analysis, analytical results must either fall within or be diluted within the Certified Range provided that holding times have not expired.

During laboratory certification, an analytical method is tested over a certain concentration range to determine the Certified Range. A typical tested concentration range would be 0, 0.5X, 1.0X, 2.0X, 5.0X, and 10.0X, where X is the Target Reporting Limit (TRL). The Certified Reporting Limit (CRL) is determined by comparing the target and actual concentrations of the tested range. The upper Certified Range is the higher target concentration achieved.

If a sample analysis indicates that the sample was not diluted adequately to be within the Certified Range, the result is reported as greater than (>) the upper Certified Range times any dilution factors. If a sample has exceeded its holding time and the result is greater than the Certified Range, the result is reported as greater than the upper Certified Range. If holding times are exceeded in attempting to dilute the sample until all results are within the Certified Range, results that are not identified above the Certified Range but that may be present at concentrations above the certified detection limit are reported as the detection limit times the dilution factor.

Several compounds detected by GC/MS were not included in the target compound list and were not conclusively identified. These compounds are included in the data presented in Appendix 36-7-II-B. Table 36-7-II-4 summarizes nontarget compounds detected at Site 36-7. It should be noted that an individual compound may have more than one retention time and that a particular retention time may be assigned to more than one compound. Table 36-7-II-4, therefore, provides only a general indication of additional compounds that may be present.

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 1 of 4)

Boring Number	Interval Depth (ft)	Unknown Number	Concentration Above Background (ppm)*	Sample Number	Lot	Best Fit	Comments
3683	5-6	526	10	36-7-47X2	KX1	Methylhexanone	
		614	3			Dibutyl nonanedioate	d
	9-10	526	10	36-7-47X3	KX1	Methylhexanone	
		614	4			Dibutyl nonanedioate	d
3684	2-3	587	0.9	36-7-47X5	KES	Unknown	a,f
		588	1			Unknown	a
	10-11	593	2	36-7-47X6	KXG	Acetylhydroxymethylpyridinone	
		524	8			Methylhexanone	
		549	0.9			Pentanoic acid	d,f
		554	1			Unknown	a
		558	1			Unknown	a
		566	1			Nonanoic acid	d
		586	2			Dodecanoic acid	d
		598	2			Tetradecanoic acid	d
		160	9			Hexamethylcyclotrisiloxane	i
		524	8			Methylhexanone	
		558	0.9			Unknown	a,f
		566	1			Nonanoic acid	d
		586	1			Dodecanoic acid	d
		598	1			Tetradecanoic acid	d
		615	2			Dibutyl nonanedioate	d
3685	7-8	543	1	36-7-47X9	KES	Unknown	a
		559	2			Octanoic acid	d
		566	0.9			Nonanoic acid	d,f
		573	0.9			Decanoic acid	d,f
		576	10			Trichlorobenzene	
		578	10			Unknown	a
		588	2			Unknown	a
		598	3			2-Chlorophosphate ethanol (3:1)	
		615	2			Unknown alkane	a
		622	1			Unknown	a
		624	0.9			Unknown alkane	a,f
		626	1			Unknown	a
		628	4			Dioctyl hexanedioate	d
		631	4			Unknown	a
		632	2			Unknown alkane	a
		634	1			Bis (2-ethylhexyl) phthalate	c
		636	1			Unknown alkane	a
		640	1			Unknown alkane	a
		644	1			Unknown alkane	a
		649	2			Unknown alkane	a
		655	2			Unknown alkane	a

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase 11 Soil Samples (page 2 of 4)

Boring Number	Interval Depth (ft)	Unknown Number	Concentration Above Background (ppm)*	Sample Number	Lot	Best Fit	Comments
3686	10-11	526	10	36-7-47X10	KX1	Methylhexanone	
		614	2			Dibutyl nonanedioate	d
	15-16	526	10	36-7-47X12	KX1	Methylhexanone	
		614	3			Dibutyl nonanedioate	d
	6-7	576	2	36-7-47X13	KET	Trichlorobenzene	
		577	2			Junipene	
		594	0.8			Unknown alkane	a,f
		602	1			Phenylethylphenol	
		629	0.9			Unknown	a,f
		630	7			Methylsulfonyldinitropropylbenzenamine	
		636	1			Unknown	a
		637	3			Unknown	a
3687	10-11	526	10	36-7-47X14	KX1	Methylhexanone	
		614	3			Dibutyl nonanedioate	d
	14-15	160	3	36-7-47X15	KZ0	Hexamethylcyclotrisiloxane	i
		526	10		KX1	Methylhexanone	
	17-18	526	20	36-7-47X18	KX1	Methylhexanone	
		160	0.8	36-7-47X19	KZ0	Hexamethylcyclotrisiloxane	i,f
	21-22	526	10		KX1	Methylhexanone	
		555	2			Unknown	a
		556	1			Unknown	a
3688	5-6	600	0.8	36-7-47X17	KET	Unknown alkane	a,f
		630	0.8			2-Ethylhexyldiphenyl phosphonate	f
	9-10	550	8	36-7-47X103	KXG	Unknown	a
		554	6			Unknown	a
		572	40			Trichlorophenol	
		626	10			Ethylhexyl trichlorophenoxyethanoate	
		627	400			Ethylhexyl trichlorophenoxyethanoate	
		628	40			Ethylhexyl trichlorophenoxyethanoate	
		629	20			Ethylhexyl trichlorophenoxyethanoate	
		630	200			Ethylhexyl trichlorophenoxyethanoate	
		631	600			Ethylhexyl trichlorophenoxyethanoate	
		632	100			Ethylhexyl trichlorophenoxyethanoate	
		633	20			Ethylhexyl trichlorophenoxyethanoate	
		634	20			Ethylhexyl trichlorophenoxyethanoate	
		160	6	36-7-47X104	KZQ	Ethylhexyl trichlorophenoxyethanoate	i
		524	6		KXG	Hexamethylcyclotrisiloxane	
		566	1			Methylhexanone	d
		586	1			Dodecanoic acid	d
		614	0.9			Dibutyl nonanedioate	d,f

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase 11 Soil Samples (page 3 of 4)

Boring Number	Interval Depth (ft)	Unknown Number	Concentration Above Background (ppm)*	Sample Number	Lot	Best Fit	Comments
3689	3-4	582	4	36-7-47X21	KET	Dihydroacenaphthylene	a
		598	1			Unknown	
		617	2			Pyrene	f
	11-12	618	0.8			Phenylanthralene	a
		624	1			Unknown alkane	a
		628	1			Unknown alkane	a
		632	1			Unknown alkane	f
		633	0.9			Triphenylene	a
		636	1			Unknown alkane	a
		640	1			Unknown alkane	a
	15-16	524	10	36-7-47X22	KXG	Methyl hexanone	
		632	2			Methylsulfonyldinitropropylbenzenamine	i
		161	3	36-7-47X23	KZQ	Hexamethyltrisiloxane	
3690	4-5	524	9		KXG	Methylhexanone	a
		541	1			Unknown	d,f
		614	0.9			Dibutyl nonanedioate	c
		636	3			Bis (2-ethylhexyl) phthalate	
						Heptanoic acid	d,f
		551	0.9	36-7-47X25	KET	Trichlorobenzenenamine	a
		576	7			Unknown	a,f
		578	6			Unknown alkane	a
		591	0.9			Unknown alkane	a
		594	2			Unknown alkane	a
		595	3			Unknown alkane	a
		600	2			Unknown alkane	a
3691	10-11	524	9	36-7-47X26	KXG	Methylhexanone	
		524	9	36-7-47X27	KXG	Methylhexanone	d
		615	0.9			Dibutylnonanedioate	
	14-15					Methylhexanone	
						Dibutylnonanedioate	
						Methylhexanone	
	0-1	526	9	36-7-47X29	KXI	Methylhexanone	
						Tetrachloroethene	
		518	1	36-7-47X41	KXG	Methylhexanone	d,f
	0-1	524	8			Nonanoic acid	d,f
		566	0.8			Dodecanoic acid	a,f
		586	0.7			Unknown alkane	
3694	4-5	661	0.8			Methylhexanone	
		524	8	36-7-47X42	KXG	Methylhexanone	
						Methylhexanone	
	0-1	526	10	36-7-47X49	KXI	Methylhexanone	a,f
		619	0.9			Unknown	d,f
		628	0.9			Butyl octadecanoate	a,f
	4-5	633	0.8			Unknown	
		526	10	36-7-47X50	KXI	Methylhexanone	
						Bis (2-ethylhexyl) phthalate	c,f
	0-1	635	0.8	36-7-47X53	KXI	Bis (2-ethylhexyl) phthalate	c
		635	2	36-7-47X54	KXI	Bis (2-ethylhexyl) phthalate	

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 4 of 4)

Boring Number	Interval Depth (ft)	Unknown Number	Concentration Above Background (ppm)*	Sample Number	Lot	Best Fit	Comments
3698	0-1	524	9	36-7-47X57	KXG	Methylhexanone	a, f
		558	0.8				
		566	1				
		586	0.9				
3700	4-5	524	8	36-7-47X58	KXG	Dodecanoic acid Methylhexanone	d, f
3703	0-1	636	1	36-7-47X65	KXC	Bis (2-ethylhexyl) phthalate	c
3704	0-1	523	0.9	36-7-47X71	KXC	Oxabicycloheptane	f
		616	3				
		632	2				
		673	5				
3705	0-1	636	2	36-7-47X73	KXC	Bis (2-ethylhexyl) phthalate	c
3706	0-1	615	1	36-7-47X77	KXC	Bis (2-ethylhexyl) phthalate	c, f
		636	1				
3707	0-1	524	1	36-7-47X79	KXC	Dibutyl nonanedioate	d
		160	1				
		625	0.9				
		628	0.8				
3708	4-5	636	4	36-7-47X81	KXF	Bis (2-ethylhexyl) phthalate	c
3709	0-1	636	0.8	36-7-47X85	KXF	Bis (2-ethylhexyl) phthalate	c, f
		160	6				
		636	1				
3709	9-10	630	3	36-7-47X86	KZN	Hexamethyltrisiloxane	i
		636	8				
		615	0.9				
3709	0-1	630	3	36-7-47X89	KXE	Bis (2-ethylhexyl) phthalate	c
		636	8				
		615	0.9				
3709	9-10	630	3	36-7-47X91	KXE	Diethyl hexanedioate	d
		636	8				
		615	0.9				
3709	9-10	630	3	36-7-47X91	KXE	Dibutyl nonanedioate	d, f
		636	8				
		615	0.9				

\* Values reported are method blank corrected.

+ a. No positive identification.

b. Surfactant.

c. Plasticizer (Note: All phthalates and adipates will have this comment).

d. Derived from natural products.

e. Suspected laboratory contaminant.

f. Low concentration.

g. Low frequency of occurrence.

h. Ubiquitous.

i. Possible column bleed.

j. None detected.

Source: ESE, 1986.

9/14/88

Nontarget compounds were detected in 42 of the 56 samples analyzed by GC/MS. Methyl hexanone was tentatively identified in 23 samples from Lots KXI, KXG, and KXC at concentrations ranging from 1 to 20 ppm. Hexamethyltrisiloxane, which was identified in 7 of 11 samples analyzed by GC/MS for VO compounds, is associated with column bleed during laboratory procedures.

Trichlorobenzenamine and methylsulfonyldinitrodipropylbenzenamine were each tentatively identified in three samples. The grab sample (6 to 7 ft) from Boring 3686 contained phenylethylphenol (2 ppm) and junipene (1 ppm) in addition to trichlorobenzene and methylsulfonyldinitrodipropylbenzenamine. Boring 3688 (9 to 10 ft) contained trichlorophenol and ethylhexyl trichlorophenoxy-ethanoate at elevated concentrations ranging from 10 to 600 ppm. Pyrene, triphenylene, and two naphthalenes were discovered in Boring 3689 (3 to 4 ft). The remaining compounds were predominantly naturally occurring compounds, phthalates, or could not be conclusively identified.

Results of the Phase II sampling program at Site 36-7 will be included as part of the overall analysis of the Central Study Area Report.

## 5.0 REFERENCES

RIC#85127R07

Environmental Science and Engineering, Inc. (ESE). June 1985. Rocky Mountain Arsenal Section 36 Contamination Survey. Final Technical Plan, Revision A. Volumes I and II. Appendix B: Laboratory Quality Assurance Plan. Task 1 (Section 36). Prepared for the Office of the Program Manager, Rocky Mountain Arsenal.

RIC#88204R02

Environmental Science and Engineering, Inc. (ESE). April 1987. Introduction to the Contamination Assessment Reports. Rocky Mountain Arsenal Phase I Remedial Investigation, Draft Final Report. Prepared for the Office of the Program Manager, Rocky Mountain Arsenal.

RIC#88063R07

Environmental Science and Engineering, Inc. (ESE). 1988. Final Phase I Contamination Assessment Report, Site 36-7: Solid Waste Burial/Sanitary Pit (Task 1, Section 36). Prepared for Office of the Manager, Rocky Mountain Arsenal.

APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS



08/09/88

APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS

PHASE I ANALYTES AND CERTIFIED METHODS

Analytes/Methods	Synonymous Names and Abbreviations	Standard Abbreviations
<b>VOLATILE ORGANIC COMPOUNDS/GCMS</b>	<b>VOL</b>	<b>VO</b>
1,1-Dichloroethane	1,1-Dichloroethane	11DCLE
1,2-Dichloroethane	1,2-Dichloroethane	12DCLE
1,1,1-Trichloroethane (TCA)	1,1,1-Trichloroethane	111TCE
1,1,2-Trichloroethane	1,1,2-Trichloroethane	112TCE
Benzene	Benzene	C <sub>6</sub> H <sub>6</sub>
Bicycloheptadiene	Bicycloheptadiene (BCHD)	BCHPD
Carbon tetrachloride	Carbon tetrachloride	CCL <sub>4</sub>
Chlorobenzene	Chlorobenzene	CLC <sub>6</sub> H <sub>5</sub>
Chloroform	Chloroform	CHCL <sub>3</sub>
Dibromochloropropane	Dibromochloropropane	DBCP
Dicyclopentadiene	Dicyclopentadiene	DCPD
Dimethyldisulfide	Dimethyldisulfide	DMS
Ethylbenzene	Ethylbenzene	ETC <sub>6</sub> H <sub>5</sub>
m-Xylene	meta-Xylene	13DMB
Methylene chloride	Methylene chloride	CH <sub>2</sub> CL <sub>2</sub>
Methylisobutyl ketone	Methylisobutyl ketone	MIBK
o,p-Xylene	ortho- and/or para-Xylene	XYLEN
Tetrachloroethene (PCE)	Tetrachloroethylene	TCLEE
Toluene	Toluene	MEC <sub>6</sub> H <sub>5</sub>
Trans 1,2-dichloroethene	Trans 1,2-dichloroethylene	12DCE
Trichloroethene (TCE)	Trichloroethylene	TRCLE
<b>SEMIVOLATILE ORGANIC COMPOUNDS/GCMS</b>	<b>EXTRACTABLE ORGANIC COMPOUNDS (EX)</b>	<b>SVO</b>
1,4-Oxathiane	1,4-Oxathiane	OXAT
2,2-Bis (para-chlorophenyl)- 1,1-dichloroethane	Dichlorodiphenylethane	PPDDE
2,2-Bis (para-chlorophenyl) 1,1,1-trichloroethane	Dichlorodiphenyltrichloroethane	PPDDT
Aldrin	Aldrin	ALDRN
Atrazine	Atrazine	ATZ
Chlordane	Chlordane	CLDAN
Chlorophenylmethyl sulfide	p-Chlorophenylmethyl sulfide	CPMS
Chlorophenylmethyl sulfoxide	p-Chlorophenylmethyl sulfoxide	CPMSO
Chlorophenylmethyl sulfone	p-Chlorophenylmethyl sulfone	CPMSO <sub>2</sub>
Dibromochloropropane	Dibromochloropropane	DBCP
Dicyclopentadiene	Dicyclopentadiene	DCPD
Dieldrin	Dieldrin	DLDRN
Diisopropylmethyl phosphonate	Diisopropylmethyl phosphonate	DIMP

08/09/88

APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS

Analytes/Methods	Synonymous Names and Abbreviations	Standard Abbreviations
SEMIVOLATILE ORGANIC COMPOUNDS (CONT)		
Dimethylmethyl phosphonate	Dimethylmethyl phosphonate	DMMP
Dithiane	Dithiane	DITH
Endrin	Endrin	ENDRN
Hexachlorocyclopentadiene	Hexachlorocyclopentadiene (HCPD)	CL <sub>6</sub> CP
Isodrin	Isodrin	ISODR
Malathion	Malathion	MLTHN
Parathion	Parathion	PRTHN
Supona	2-Chloro-1(2,4-dichlorophenyl) vinyl diethyl phosphate	SUPONA
Vapona	Vapona	DDVP
METALS/ICP		
Cadmium	ICAP Cadmium	ICP CD
Chromium	Chromium	CR
Copper	Copper	CU
Lead	Lead	PB
Zinc	Zinc	ZN
SEPARATE ANALYSES		
Arsenic/AA	Arsenic	AS
Mercury/AA	Mercury	HC
Dibromochloropropane/GC	Dibromochloropropane	DBCP

APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS

PHASE II ANALYTES AND CERTIFIED METHODS

Analytes/Methods	Synonymous Names and Abbreviations	Standard Abbreviations
VOLATILE ORGANIC COMPOUNDS/GCMS (Same as Phase I)	VOL	VO
SEMIVOLATILE ORGANIC COMPOUNDS/GCMS (Same as Phase I)	EXTRACTABLE ORGANIC COMPOUNDS (EX)	SVO
VOLATILE HALOCARBON COMPOUNDS/GCCON	PURGEABLE HALOCARBONS (PHC)	VHO
1,1-Dichloroethane	1,1-Dichloroethane	11DCLE
1,2-Dichloroethane	1,2-Dichloroethane	12DCLE
1,1-Dichloroethene	1,1-Dichloroethene	11DCE
1,1,1-Trichloroethane (TCA)	1,1,1-Trichloroethane	111TCE
1,1,2-Trichloroethane	1,1,2-Trichloroethane	112TCE
Carbon tetrachloride	Carbon tetrachloride	CCL <sub>4</sub>
Chlorobenzene	Chlorobenzene	CLC <sub>6</sub> H <sub>5</sub>
Chloroform	Chloroform	CHCL <sub>3</sub>
Methylene chloride	Methylene chloride	CH <sub>2</sub> CL <sub>2</sub>
Trans 1,2-dichloroethylene	Trans 1,2-dichloroethene	12DCE
Tetrachloroethene (PCE)	Tetrachloroethylene	TCLEE
Trichloroethene (TCE)	Trichloroethylene	TRCLE
VOLATILE HYDROCARBON COMPOUNDS/GCFID	DCPD	HYDCBN
Bicycloheptadiene	Bicycloheptadiene (BCHD)	BCHPD
Dicyclopentadiene	Dicyclopentadiene	DCPD
Methylisobutyl ketone	Methylisobutyl ketone	MIBK
VOLATILE AROMATIC COMPOUNDS/GCPID	PURGEABLE AROMATICS (PAM)	VAO
Benzene	Benzene	C <sub>6</sub> H <sub>6</sub>
Ethylbenzene	Ethylbenzene	ETC <sub>6</sub> H <sub>5</sub>
m-Xylene	meta-Xylene	13DMB
o,p-Xylene	ortho- and/or para-Xylene	XYLEN
Toluene	Toluene	MEC <sub>6</sub> H <sub>5</sub>
ORGANOCHLORINE PESTICIDES/GCEC		OCP
2,2-Bis (para-chlorophenyl)- 1,1-dichloroethane	Dichlorodiphenylethane	PPDDE
2,2-Bis (para-chlorophenyl)- 1,1,1-trichloroethane	Dichlorodiphenyltrichloroethane	PPDDT
Aldrin	Aldrin	ALDRN
Chlordane	Chlordane	CLDAN
Dieldrin	Dieldrin	DLDRN
Endrin	Endrin	ENDRN
Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	CL <sub>6</sub> CP
Isodrin	Isodrin	ISODR

APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS

Analytes/Methods	Synonymous Names and Abbreviations	Standard Abbreviations
ORGANOPHOSPHOROUS PESTICIDES/GCNP	ORGANOPHOSPHOROUS COMPOUNDS (OPC)	OPP
Atrazine	Atrazine	ATZ
Malathion	Malathion	MLTHN
Parathion	Parathion	PRTHN
Supona	2-Chloro-1(2,4-dichlorophenyl) vinyl diethyl phosphate	SUPONA
Vapona	Vapona	DDVP
ORGANOPHOSPHOROUS COMPOUNDS/GCFPD	DIMP	OPC
Diisopropylmethyl phosphonate	Diisopropylmethyl phosphonate	DIMP
Dimethylmethyl phosphonate	Dimethylmethyl phosphonate	DMMP
ORGANOSULPHUR COMPOUNDS/GCFPD		OSC
1,4-Oxathiane	1,4-Oxathiane	OXAT
Benzothiazole	Benzothiazole	BTZ
Chlorophenylmethyl sulfide	p-Chlorophenylmethyl sulfide	CPMS
Chlorophenylmethyl sulfone	p-Chlorophenylmethyl sulfone	CPMSO <sub>2</sub>
Chlorophenylmethyl sulfoxide	p-Chlorophenylmethyl sulfoxide	CPMSO
Dimethyldisulfide	Dimethyldisulfide	DMDS
Dithiane	Dithiane	DITH
METALS/ICP	ICAP	ICP
Cadmium	Cadmium	CD
Chromium	Chromium	CR
Copper	Copper	CU
Lead	Lead	PB
Zinc	Zinc	ZN
SEPARATE ANALYSES		
Arsenic/AA	Arsenic	AS
Mercury/AA	Mercury	HG
Dibromochloropropane/GC	Dibromochloropropane	DBCP

APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS

Analytes/Methods	Synonymous Names and Abbreviations	Standard Abbreviations
ARMY AGENT DEGRADATION PRODUCTS:		ADP
AGENT PRODUCTS/HPLC	TDGCL	
Chloroacetic Acid	Chloroacetic acid	CLC2A
Thiodiglycol	Thiodiglycol (TDG)	TDGCL
AGENT PRODUCTS/IONCHROM	IMPA	GBDP
Fluoroacetic acid	Fluoroacetic acid	FC2A
Isopropylmethylphosphonic acid	Isopropylmethylphosphonate	IMPA
Methylphosphonic acid	Methylphosphonate	MPA

Methods	Abbreviations
Atomic Absorption Spectroscopy	AA
Gas Chromatography/Conductivity Detector	GC CON
Gas Chromatography/Electron Capture	GCEC
Gas Chromatography/Flame Ionization Detector	GCFID
Gas Chromatography/Flame Photometric	GC FPD
Gas Chromatography/Mass Spectrometry	GCMS
Gas Chromatography/Nitrogen Phosphorous Detector	GCNPD
Gas Chromatography/Photoionization Detector	GCPID
High Performance Liquid Chromatography	HPLC
Inductively Coupled Argon Plasma	ICP, ICAP
Ion Chromatography	IONCHROM

APPENDIX 36-7-II-B  
PHASE II CHEMICAL DATA

PARAMETERS	UNITS	STORET #	METHOD	DATE	TIME	3683A	3683B	3684GRAB	3684A	3684B	3685CRAB	3685A	3685X	3686GRAB	3686A	3686B	3686GRAB	3687A	3687B	3689CRAB
				03/15/88	08:19	SO	SO	02/03/88	03/16/88	03/16/88	02/02/88	03/15/88	03/15/88	02/02/88	03/14/88	03/14/88	02/03/88	36-7-47	36-7-47	36-7-47
				08:33		SO	SO	12:10	08:43	08:54	12:22	09:20	10:12	10:57	09:54	10:22	12:46	36-7-47	36-7-47	36-7-47
						SO	SO		SO	SO	SO	SO	SO	SO	SO	SO	SO	12	19	21
						BORE	BORE		BORE	BORE	CSDT	BORE	BORE	CSDT	BORE	BORE	BORE			
						5	9	0	10	14	0	10	15	0	10	14	0	17		
						S	S	G	S	S	S	S	S	G	S	S	G	S	S	G
						RK	RK	RK	RK	RK	RK0	RK	RK	RK	RK	RK	RA	RA	RA	RK
						24.1	23.8	12.1	13.5	21.7	19.6	25.4	22.2	13.3	15.7	20.7	13.0	24.2	21.9	10.8
						<0.921	<0.921	<0.921	<0.921	<0.921	1.28	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921
						<7.16	<7.16	16.9	9.48	<7.16	11.8	<7.16	<7.16	11.5	<7.16	<7.16	15.0	<7.16	<7.16	<7.16
						34.3	31.6	24.7	22.9	51.3	32.9	35.0	41.0	17.7	12.3	19.6	77.1	27.0	34.4	21.4
						<16.8	<16.8	41.8	48.0	<16.8	61.4	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	80.6
						66.6	70.5	75.6	48.8	87.3	167	64.9	84.7	61.8	70.1	54.7	100	58.2	84.6	252
						<4.70	<4.70	7.45	<4.70	<4.70	6.97	<4.70	<4.70	<4.70	<4.70	<4.70	6.83	<4.70	<4.70	<4.70
						<0.050	<0.050	0.110	0.138	<0.050	1.67	0.075	<0.050	<0.050	<0.050	<0.050	0.303	<0.050	0.063	0.105
						<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94
						<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73
						<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
						<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
						<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
						<0.29	<0.29	<0.29	<0.29	<0.29	0.71	<0.29	<0.29	<0.29	<0.29	1.3	<0.29	<0.29	<0.29	<0.29
						<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
						<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
						<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
						<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
						<0.25	<0.25	9.8	0.33	<0.25	<0.25	<0.25	<0.25	1.2	<0.25	<0.25	0.35	<0.25	<0.25	<0.25
						UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	DATE TIME	3682A 36-7-47 08:19	3663B 36-7-47 08:33	3684GRAB 36-7-47 12:10	3684A 36-7-47 08:43	3684B 36-7-47 08:54	3685GRAB 36-7-47 12:22	3685A 36-7-47 09:20	3685X 36-7-47 10:12	3686GRAB 36-7-47 10:57	3686A 36-7-47 09:54	3686B 36-7-47 10:22	3686GRAB 36-7-47 12:48	3687A 36-7-47 09:40	3687B 36-7-47 12:03	3689GRAB 36-7-47 10:16
DIMP	UG/G-DRY	98645	Q9		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4 DITHIANE	UG/G-DRY	98650	Q9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DMHP	UG/G-DRY	98657	Q9		<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ENDPIN	UG/G-DRY	98369	Q9		<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
HEXACHLOROCYCLOPENTADIENE	UG/G-DRY	98647	Q9		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
ISODRIN	UG/G-DRY	98649	Q9		<0.33	<0.33	0.53	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
MALATHION	UG/G-DRY	98648	Q9		<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,4 OXATHIANE	UG/G-DRY	98644	Q9		<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
ETY'PARATHION	UG/G-DRY	98658	Q9		<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
SUPONA	UG/G-DRY	98656	Q9		<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
VAPONA	UG/G-DRY	98646	Q9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DICYCLOPENTADIENE	UG/G-DRY	98651	Q9		<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
ETHYLBENZENE	UG/G-DRY	98688	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
METHYLENE CHLORIDE	UG/G-DRY	98689	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TETRACHLOROETHENE	UG/G-DRY	98690	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TOLUENE	UG/G-DRY	98691	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,2-TRICHLOROETHANE	UG/G-DRY	98693	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TRICHLOROETHENE	UG/G-DRY	98694	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
M-XYLENE	UG/G-DRY	98695	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
MIBK	UG/G-DRY	98696	H9		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
DMDS	UG/G-DRY	98697	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
BENZENE	UG/G-DRY	98699	H9		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25



ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

SAMPLE ID/#

[illegible]

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NAME RMA TASK 47/1  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

## SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	3683A 36-7-47	3683B 36-7-47	3683C 36-7-47	3684A 36-7-47	3684B 36-7-47	3685A 36-7-47	3685X 36-7-47	3686A 36-7-47	3686B 36-7-47	3686C 36-7-47	3687A 36-7-47	3687B 36-7-47	3689CRAB 36-7-47
DATE				03/15/88	03/15/88	02/03/88	03/16/88	03/16/88	03/15/88	03/15/88	03/14/88	03/14/88	02/03/88	03/14/88	03/14/88	02/03/88
TIME				08:19	08:33	12:10	08:43	08:54	09:20	10:12	09:54	10:22	12:48	09:40	12:03	10:16
UNK577	UG/G	90577	Q9													
UNK594	UG/G	90594	Q9													
UNK629	UG/G	90629	Q9													
UNK630	UG/G	90630	Q9													
UNK637	UG/G	90637	Q9													
UNK555	UG/G	90555	Q9													
UNK556	UG/G	90556	Q9													
UNK582	UG/G	90582	Q9													
UNK617	UG/G	90617	Q9													
UNK161	UG/G	90161	Q9													
UNK541	UG/G	90541	Q9													
UNK551	UG/G	90551	Q9													
UNK591	UG/G	90591	Q9													
UNK595	UG/G	90595	Q9													
UNK518	UG/G	90518	Q9													
UNK661	UG/G	90661	Q9													
UNK523	UG/G	90523	Q9													
UNK616	UG/G	90616	Q9													
UNK673	UG/G	90673	Q9													
UNK550	UG/G	90550	Q9													
UNK572	UG/G	90572	Q9													
UNK627	UG/G	90627	Q9													
UNK526	UG/G	90526	Q9													
UNK614	UG/G	90614	Q9													

PAGE#6

06/24/88

ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL

PROJECT NAME

RMA TASK 47/1

PROJECT MANAGER BILL FRASER

LAB COORDINATOR JOE VONDRICK

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	3683A 36-7-47	3683B 36-7-47	3684A 36-7-47	3684B 36-7-47	3685CRAB 36-7-47	3685X 36-7-47	3686A 36-7-47	3686B 36-7-47	3686CRAB 36-7-47	3687A 36-7-47	3687B 36-7-47	3689CRAB 36-7-47
DATE				03/15/88	03/15/88	03/16/88	03/16/88	02/02/88	03/15/88	03/14/88	03/14/88	02/03/88	03/14/88	03/14/88	02/03/88
TIME				08:19	08:33	08:43	08:54	12:22	10:12	09:54	10:22	12:48	09:40	12:03	10:16
UNKN635	UG/G	90635	09												

0.2

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

 PROJECT NAME RMA TASK 47/1  
 PROJECT NUMBER 88425 0000  
 PROJECT MANAGER BILL FRASER  
 FIELD GROUP 36-7-47  
 LAB COORDINATOR JOE VONDRICK  
 ALL

## SAMPLE ID/ #

PARAMETERS	UNITS	STORET #	METHOD	3689QFAB	3689A	3689B	3690CRAB	3690A	3690B	3691A	3691B	3692A	3692B	3693A	3693B	3694A	3694B	3695A
DATE				02/03/88	03/16/88	03/16/88	02/03/88	03/16/88	03/16/88	03/15/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/16/88	03/16/88	03/15/88
TIME				10:16	10:43	10:55	11:22	11:46	11:55	10:57	11:07	11:20	11:27	11:53	12:03	13:07	13:17	11:37
SAMPLE TYPE				SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SITE TYPE I				CSDT	BORE	BORE	CSDT	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE
SAMPLE DEPTH				0	11	15	0	10	14	0	0	0	4	0	4	0	4	0
FT																		
SAMPLING TECHNIQUE				G	S	S	G	S	S	S	S	S	S	S	S	S	S	S
INSTALLATION CODE				RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK
MOISTURE				70320	10.8	14.0	10.0	13.4	16.1	9.6	8.4	11.0	5.8	12.9	8.5	9.1	5.2	13.6
CADMIUM				1028	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921
UG/G- DRY				R9	14.0	9.92	17.2	9.39	12.0	12.3	12.4	<7.16	<7.16	<7.16	12.2	11.0	8.95	17.6
CHROMIUM				99584	<7.16	13.0	19.6	10.2	14.8	10.7	9.25	8.33	8.80	8.86	13.1	14.1	9.10	12.9
COPPER				1043	21.4	16.9	21.5	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8
UG/G- DRY				R9	80.6	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8
LEAD				1052	252	48.0	150	39.6	57.0	44.0	40.9	34.6	34.8	32.3	50.4	131	35.6	55.6
UG/G- DRY				R9	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70
ZINC				1093	0.105	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
UG/G- DRY				T9	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94
MERCURY				71921	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73
UG/G- DRY				V9	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ALDRIN				98356	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
UG/G- DRY				O9	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
ATRAZINE				98655	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
UG/G- DRY				O9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
CHLORDANE				98361	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
UG/G- DRY				O9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
P-CLPHENYLMETHY-				98653	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
SULFIDE				O9	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
P-CLPHENYLMETHY-				98654	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
SULFOXIDE				O9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
P-CLPHENYLMETHY-				98703	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
SULFONE				O9	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
UG/G- DRY				O9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DECP (NEMACON)				98652	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
UG/G- DRY				O9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
DICYCLOPENTADIENE				98651	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
UG/G- DRY				O9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DDE, PP'				98363	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
UG/G- DRY				O9	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
DDT, PP'				98364	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
UG/G- DRY				O9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
DIELDRIN				98365	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
UG/G- DRY				O9	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37

PARAMETERS	UNITS	STORET #	METHOD	3689GRAB 36-7-47 21	3689A 36-7-47 22	3689B 36-7-47 23	3690GRAB 36-7-47 25	3690A 36-7-47 26	3690B 36-7-47 27	3691A 36-7-47 29	3691B 36-7-47 30	3692A 36-7-47 33	3692B 36-7-47 34	3693A 36-7-47 37	3693B 36-7-47 38	3694A 36-7-47 41	3694B 36-7-47 42	3695A 36-7-47 45
DATE	TIME			02/03/88 10:16	03/16/88 10:43	03/16/88 10:55	02/03/88 11:22	03/16/88 11:46	03/16/88 11:55	03/15/88 10:57	03/15/88 11:07	03/10/88 11:20	03/10/88 11:27	03/10/88 11:53	03/10/88 12:03	03/16/88 13:07	03/16/88 13:17	03/15/88 11:37
DIMP	UG/G-DRY	98645	Q9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4 DITHIANE	UG/G-DRY	98650	Q9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DMHP	UG/G-DRY	98657	Q9	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ENDRIN	UG/G-DRY	98369	Q9	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
HEXACHLOROCYCLOPENT-ADIENE	UG/G-DRY	98647	Q9	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
ISODRIN	UG/G-DRY	98649	Q9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
MALATHION	UG/G-DRY	98648	Q9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,4 OXATHIANE	UG/G-DRY	98644	Q9	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
ETYPARATHION	UG/G-DRY	98658	Q9	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
SUPONA	UG/G-DRY	98656	Q9	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
VAPONA	UG/G-DRY	98646	Q9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DICYCLOPENTADIENE	UG/G-DRY	98651	Q9	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
ETHYLBENZENE	UG/G-DRY	98688	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
METHYLENE CHLORIDE	UG/G-DRY	98689	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TETRACHLOROETHENE	UG/G-DRY	98690	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
THOENE	UG/G-DRY	98691	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,2-TRICHLOROETHANE	UG/G-DRY	98693	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TRICHLOROETHENE	UG/G-DRY	98694	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
M-XYLENE	UG/G-DRY	98695	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
MIBK	UG/G-DRY	98696	W9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
DMS	UG/G-DRY	98697	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
BENZENE	UG/G-DRY	98699	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

 PROJECT NAME RMA TASK 47/1  
 PROJECT NUMBER 88425 0000  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICA

 FIELD GROUP 36-7-47  
 ALL

## SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	3689CRAB	3689A	3689B	3690CRAB	3690A	3690B	3691A	3691B	3692A	3692B	3693A	3693B	3694A	3694B	3695A
DATE				02/03/88	03/16/88	03/16/88	02/03/88	03/16/88	03/16/88	03/15/88	03/15/88	03/10/88	03/10/88	03/10/88	03/10/88	03/16/88	03/16/88	03/15/88
TIME				10:16	10:43	10:55	11:22	11:46	11:55	10:57	11:07	11:20	11:27	11:53	12:03	12:07	13:17	
UNK600	UG/G	90600																
UNK609	UG/G	90609																
UNK618	UG/G	90618																
UNK619	UG/G	90619																
UNK626	UG/G	90626																
UNK631	UG/G	90631																
UNK633	UG/G	90633																
UNK160	UG/G	90160																
UNK615	UG/G	90615																
UNK543	UG/G	90543																
UNK559	UG/G	90559																
UNK573	UG/G	90573																
UNK576	UG/G	90576																
UNK578	UG/G	90578																
UNK622	UG/G	90622																
UNK624	UG/G	90624																
UNK628	UG/G	90628																
UNK632	UG/G	90632																
UNK634	UG/G	90634																
UNK636	UG/G	90636																
UNK640	UG/G	90640																
UNK644	UG/G	90644																
UNK649	UG/G	90649																
UNK655	UG/G	90655																

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NAME RMA TASK 47/1  
PROJECT NUMBER 88425 0000  
FIELD GROUP 36-7-47  
LAB COORDINATOR JOE VONDRICK

ALL

## SAMPLE ID/#

PARAMETERS	STORET #	UNITS	36890CRAB	3689A	3689B	3690CRAB	3690A	3690B	3691A	3691B	3692A	3692B	3693A	3693B	3694A	3694B	3695A
	36-7-47		36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
METHOD	21		22	23	25	26	27	29	30	33	34	37	38	41	42	45	
DATE	02/03/88		03/16/88	03/16/88	02/03/88	03/16/88	03/16/88	03/15/88	03/15/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/16/88	03/16/88	03/15/88
TIME	10:16		10:43	10:55	11:22	11:46	11:55	10:57	11:07	11:20	11:27	11:53	12:03	13:07	13:17	11:37	
UNK577	90577	UG/G															
UNK594	90594	UG/G															
UNK629	90629	UG/G															
UNK630	90630	UG/G															
UNK637	90637	UG/G															
UNK555	90555	UG/G															
UNK556	90556	UG/G															
UNK582	90582	UG/G	4														
UNK617	90617	UG/G	2														
UNK161	90161	UG/G		3													
UNK541	90541	UG/G		1.0													
UNK551	90551	UG/G			0.9												
UNK591	90591	UG/G			0.9												
UNK595	90595	UG/G			3												
UNK518	90518	UG/G													1		
UNK661	90661	UG/G													0.8		
UNK523	90523	UG/G															
UNK616	90616	UG/G															
UNK673	90673	UG/G															
UNK550	90550	UG/G															
UNK572	90572	UG/G															
UNK627	90627	UG/G															
UNK526	90526	UG/G															
UNK614	90614	UG/G	1														
									9								

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NAME PMA TASK 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL

## SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	3689A	3689B	3690GRAB	3690A	3690B	3691A	3691B	3692A	3692B	3693A	3693B	3694A	3694B	3695A
DATE				02/03/88	03/16/88	02/03/88	03/16/88	03/16/88	03/15/88	03/15/88	03/10/88	03/10/88	03/10/88	03/10/88	03/16/88	03/16/88	03/15/88
TIME				10:16	10:43	11:22	11:46	11:55	10:57	11:07	11:20	11:27	11:53	12:03	13:07	13:17	11:37

90635  
Q9

UG/G



PARAMETERS	UNITS	STORET #	METHOD	DATE TIME	36958 36-7-47 11:45	3696A 36-7-47 08:40	3696B 36-7-47 08:52	3697A 36-7-47 12:53	3697B 36-7-47 13:00	3698A 36-7-47 12:30	3698B 36-7-47 12:40	3699A 36-7-47 12:15	3699B 36-7-47 12:23	3700A 36-7-47 09:14	3701A 36-7-47 09:24	3702A 36-7-47 09:34	3703A 36-7-47 09:46	3704A 36-7-47 09:54	3705A 36-7-47 10:02
SAMPLE TYPE		71999			SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SITE TYPE 1		99759			BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE
SAMPLE DEPTH FT		99758			4	0	4	0	4	0	4	0	4	0	0	0	0	0	0
SAMPLING TECHNIQUE		72005			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
INSTALLATION CODE SAMPLE		99720			RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK
MOISTURE		70320			6.3	12.0	5.7	13.4	5.3	11.3	5.0	12.3	5.4	8.3	9.4	13.3	10.9	11.1	11.0
CADMIUM		1028			<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921
CHROMIUM		99584			14.5	<7.16	11.9	9.27	<7.16	<7.16	9.50	<7.16	10.6	8.83	<7.16	11.1	11.8	15.5	10.3
COPPER		1043			14.6	10.0	8.38	8.77	6.81	7.38	8.86	7.74	10.1	9.77	8.41	11.9	13.3	8.70	11.1
LEAD		1052			<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	22.5	<16.8	<16.8	<16.8
ZINC		1093			56.1	39.0	36.3	45.1	32.5	33.5	39.2	35.3	43.8	36.9	28.3	48.9	45.9	33.4	51.6
ARSENIC		1003			<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70
MERCURY		71921			2.08	<0.050	0.061	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.054	0.119	0.320	0.065	<0.050	<0.050
ALDRIN		98356			<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94
ATRAZINE		98655			<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73
CHLORDANE		98361			<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
P-CLPHENYLMETHY-		98653			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
SULFIDE UG/G-DRY		98654			<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
P-CLPHENYLMETHY-		98703			<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
PHOXIDE UG/G-DRY		98652			<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
SULFONE UG/G-DRY		98651			<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
DBCP (NEMAGON)		98363			<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
DICYCLOPENTADIENE		98364			<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
DDT, PP'		98365			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DDT, PP'		98366			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DIELDRIN		98367			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING 06/24/88

PROJECT NAME PMA TASK 47/1  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

PARAMETERS	UNITS	STORET #	METHOD	3695B 36-7-47 11:45	3696A 36-7-47 08:40	3696B 36-7-47 08:52	3697A 36-7-47 12:53	3697B 36-7-47 13:00	3698A 36-7-47 12:30	3698B 36-7-47 12:40	3699A 36-7-47 12:15	3699B 36-7-47 12:23	3700A 36-7-47 09:14	3701A 36-7-47 09:24	3702A 36-7-47 09:34	3703A 36-7-47 09:46	3704A 36-7-47 09:54	3705A 36-7-47 10:02
DATE				03/15/88	03/14/88	03/14/88	03/15/88	03/15/88	03/16/88	03/16/88	03/15/88	03/15/88	03/09/88	03/09/88	03/09/88	03/09/88	03/09/88	03/09/88
TIME				11:45	08:40	08:52	12:53	13:00	12:30	12:40	12:15	12:23	09:14	09:24	09:34	09:46	09:54	10:02
DIMP	UG/G-DRY	98645	09	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4 DITHIANE	UG/G-DRY	98650	09	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DHMP	UG/G-DRY	98657	09	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ENDRIN	UG/G-DRY	98369	09	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
HEXACHLOROCYCLOPENT-ADIENE	UG/G-DRY	98647	09	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
ISODRIN	UG/G-DRY	98649	09	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
MALATHION	UG/G-DRY	98648	09	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,4 OXATHIANE	UG/G-DRY	98644	09	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
ETY'PARATHION	UG/G-DRY	98658	09	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
SUPONA	UG/G-DRY	98656	09	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
VAPONA	UG/G-DRY	98646	09	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DICYCLOPENTADIENE	UG/G-DRY	98651	09	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
ETHYLBENZENE	UG/G-DRY	98688	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
METHYLENE CHLORIDE	UG/G-DRY	98689	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
TETRACHLOROETHENE	UG/G-DRY	98690	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
TOLUENE	UG/G-DRY	98691	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,1,2-TRICHLOROETHANE	UG/G-DRY	98693	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
TRICHLOROETHENE	UG/G-DRY	98694	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
M-XYLENE	UG/G-DRY	98695	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
HIBA	UG/G-DRY	98696	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
DMS	UG/G-DRY	98697	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
BENZENE	UG/G-DRY	98699	W9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

PROJECT NUMBER 88425 0000

FIELD GROUP 36-7-47

ALL

## SAMPLE ID#

PARAMETERS	UNITS	STORET #	METHOD	DATE	TIME	3695B 36-7-47 46	3696A 36-7-47 49	3696B 36-7-47 50	3697A 36-7-47 53	3697B 36-7-47 54	3698A 36-7-47 57	3698B 36-7-47 58	3699A 36-7-47 61	3699B 36-7-47 62	3700A 36-7-47 65	3701A 36-7-47 67	3702A 36-7-47 69	3703A 36-7-47 71	3704A 36-7-47 73	3705A 36-7-47 75
O-AND/OR P-XYLENE	UG/G-DRY	98700	W9	03/15/88	11:45															
CARBON TETRACHLORIDE	UG/G-DRY	98680	W9	03/14/88	08:52															
CHLOROBENZENE	UG/G-DRY	98681	W9	03/14/88	08:40															
CHLOROFORM	UG/G-DRY	98682	W9	03/14/88	08:40															
1,1-DICHLOROETHANE	UG/G-DRY	98683	W9	03/14/88	08:40															
1,2-DICHLOROETHANE	UG/G-DRY	98684	W9	03/14/88	08:40															
BICYCLOHEPTADIENE	UG/G-DRY	98686	W9	03/14/88	08:40															
DBCP (NEMAGON)	UG/G-DRY	98652	W9	03/14/88	08:40															
THIODIGLYCOL	UG/G	99798	MM9	03/14/88	08:40															
CHLOROACETIC ACID	UG/G	97285	MM9	03/14/88	08:40															
IMPA	UG/G	97382	AAA9	03/14/88	08:40															
FLUOROACETIC ACID	UG/G	97381	AAA9	03/14/88	08:40															
MPA	UG/G	97383	AAA9	03/14/88	08:40															
UNK587	UG/G	90587	Q9	03/14/88	08:40															
UNK588	UG/G	90588	Q9	03/14/88	08:40															
UNK593	UG/G	90593	Q9	03/14/88	08:40															
UNK602	UG/G	90602	Q9	03/14/88	08:40															
UNK524	UG/G	90524	Q9	03/14/88	08:40															
UNK549	UG/G	90549	Q9	03/14/88	08:40															
UNK554	UG/G	90554	Q9	03/14/88	08:40															
UNK558	UG/G	90558	Q9	03/14/88	08:40															
UNK566	UG/G	90566	Q9	03/14/88	08:40															
UNK586	UG/G	90586	Q9	03/14/88	08:40															
UNK598	UG/G	90598	Q9	03/14/88	08:40															

ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88  
 PROJECT NUMBER: 88425 0000  
 FIELD GROUP 36-7-47  
 ALL

PROJECT NAME RMA TASK 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

PARAMETERS	UNITS	STORET #	METHOD	3695B 36-7-47	3696A 36-7-47	3696B 36-7-47	3697A 36-7-47	3697B 36-7-47	3698A 36-7-47	3698B 36-7-47	3699A 36-7-47	3700A 36-7-47	3701A 36-7-47	3702A 36-7-47	3703A 36-7-47	3704A 36-7-47	3705A 36-7-47
DATE				03/15/88	03/14/88	03/14/88	03/15/88	03/15/88	03/16/88	03/16/88	03/15/88	03/09/88	03/09/88	03/09/88	03/09/88	03/09/88	03/09/88
TIME				11:45	08:40	08:52	12:53	13:00	12:30	12:40	12:15	09:14	09:24	09:34	09:46	09:54	10:02
UNK600	UG/G	90600	Q9														
UNK609	UG/G	90609	Q9														
UNK618	UG/G	90618	Q9														
UNK619	UG/G	90619	Q9														
UNK626	UG/G	90626	Q9														
UNK631	UG/G	90631	Q9														
UNK633	UG/G	90633	Q9														
UNK160	UG/G	90160	W9														
UNK615	UG/G	90615	Q9														
UNK543	UG/G	90543	Q9														
UNK559	UG/G	90559	Q9														
UNK573	UG/G	90573	Q9														
UNK576	UG/G	90576	Q9														
UNK578	UG/G	90578	Q9														
UNK622	UG/G	90622	Q9														
UNK624	UG/G	90624	Q9														
UNK628	UG/G	90628	Q9														
UNK632	UG/G	90632	Q9														
UNK634	UG/G	90634	Q9														
UNK636	UG/G	90636	Q9														
UNK640	UG/G	90640	Q9														
UNK644	UG/G	90644	Q9														
UNK649	UG/G	90649	Q9														
UNK655	UG/G	90655	Q9														

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING 06/24/88

PROJECT NUMBER: 88425 0000  
 FIELD GROUP 36-7-47  
 ALL  
 PROJECT NAME PMA TASK 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

PARAMETERS	UNITS	STORET #	METHOD	36958 36-7-47	3696A 36-7-47	3696B 36-7-47	3697A 36-7-47	3697B 36-7-47	3698A 36-7-47	3698B 36-7-47	3699A 36-7-47	3699B 36-7-47	3700A 36-7-47	3701A 36-7-47	3702A 36-7-47	3703A 36-7-47	3704A 36-7-47	3705A 36-7-47
DATE				03/15/88	03/14/88	03/14/88	03/15/88	03/15/88	03/16/88	03/16/88	03/15/88	03/15/88	03/09/88	03/09/88	03/09/88	03/09/88	03/09/88	03/09/88
TIME				11:45	08:40	08:52	12:53	13:00	12:30	12:40	12:15	12:23	09:14	09:24	09:34	09:46	09:54	10:02
UNK577	UG/G	90577																
UNK594	UG/G	90594																
UNK629	UG/G	90629																
UNK630	UG/G	90630																
UNK637	UG/G	90637																
UNK555	UG/G	90555																
UNK556	UG/G	90556																
UNK582	UG/G	90582																
UNK617	UG/G	90617																
UNK161	UG/G	90161																
UNK541	UG/G	90541																
UNK551	UG/G	90551																
UNK591	UG/G	90591																
UNK595	UG/G	90595																
UNK518	UG/G	90518																
UNK661	UG/G	90661																
UNK523	UG/G	90523																
UNK616	UG/G	90616																
UNK673	UG/G	90673																
UNK550	UG/G	90550																
UNK572	UG/G	90572																
UNK627	UG/G	90627																
UNK526	UG/G	90526																
UNK614	UG/G	90614																

0.9

0.9

3

5

10 10

06/24/88

ENVIRONMENTAL SCIENCE & ENGINEERING

PROJECT NUMBER 88425 0000  
FIELD GROUP 36-7-47  
PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	36958	36968	3697A	3697B	3698A	3698B	3699A	3699B	3700A	3701A	3702A	3703A	3704A	3705A
DATE				36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
TIME				11:45	08:40	12:53	13:00	12:30	12:40	12:15	12:23	09:14	09:24	09:34	09:46	09:54	10:02
UNK635	UG/G	90635	Q9			0.8	2										

PROJECT NAME RMA TASK 47/1

PROJECT NUMBER 88425 0000

PROJECT MANAGER BILL FRASER

FIELD GROUP 36-7-47

LAB COORDINATOR JOE VONDRICK

ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	3706A	3707A	3707B	3707C	3706A	3708B	3708C	3709A	3709B	3709C	3710A	3710B	3711A	3711B	3712A
METHOD			36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
			77	79	80	81	84	85	86	89	90	91	94	95	97	98	100
DATE			03/09/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/14/88	03/14/88	03/14/88	03/14/88	03/14/88
TIME			10:10	08:21	08:33	08:46	09:20	09:29	09:46	10:20	10:30	10:47	13:18	13:22	12:49	12:54	13:43
SAMPLE TYPE			SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SITE TYPE			BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE	BORE
SAMPLE DEPTH			0	0	4	9	0	4	9	0	4	9	0	2	0	2	0
FT																	
SAMPLING TECHNIQUE			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
INSTALLATION CODE			RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK
SAMPLE																	
MOISTURE			11.7	8.7	8.6	8.1	10.6	6.7	9.5	12.2	8.2	12.2	8.3	3.0	10.4	5.8	11.5
CADMIUM			<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921
UG/G- DRY																	
CHROMIUM			12.1	<7.16	10.6	9.30	<7.16	9.08	16.0	11.5	14.9	11.3	<7.16	<7.16	11.0	10.3	<7.16
UG/G- DRY																	
COPPER			9.26	6.97	9.35	10.7	11.2	9.76	12.3	14.3	13.7	13.1	8.77	6.54	9.06	7.80	7.52
UG/G- DRY																	
LEAD			<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8
UG/G- DRY																	
ZINC			38.7	25.3	34.9	34.1	38.5	34.7	38.6	53.8	51.3	37.4	34.3	27.8	36.7	32.2	34.3
UG/G- DRY																	
ARSENIC			6.15	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70	<4.70
UG/G- DRY																	
MERCURY			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
UG/G- DRY																	
ALDRIN			<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94
UG/G- DRY																	
ATRAZINE			<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73
UG/G- DRY																	
CHLORDANE			<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
UG/G- DRY																	
P-CLPHENYLMETHY-			<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
SULF IDE																	
P-CLPHENYLMETHY-			<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
SULFOXIDE																	
P-CLPHENYLMETHY-			<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
SULFONE																	
DBCP (NEMAGON)			<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
UG/G- DRY																	
DICYCLOPENTADIENE			<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
UG/G- DRY																	
DDT, PP'			<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
UG/G- DRY																	
DDT, PP'			<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37
UG/G- DRY																	
DIELDRIN			<0.25	<0.25	<0.25	<0.25	0.51	<0.25	<0.25	0.35	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
UG/G- DRY																	

PARAMETERS	UNITS	STORET #	METHOD	3706A	3707A	3707B	3707C	3708A	3708B	3708C	3709A	3709B	3709C	3710A	3710B	3711A	3711B	3712A
				36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
				77	79	80	81	84	85	86	89	90	91	94	95	97	98	100
				03/09/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/14/88	03/14/88	03/14/88	03/14/88	03/14/88
				10:10	08:21	08:33	08:46	09:20	09:29	09:46	10:20	10:30	10:47	13:18	13:22	12:49	12:54	13:43
DIMP	UG/G-DRY	98645	Q9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4 DITHIANE	UG/G-DRY	98650	Q9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DMHP	UG/G-DRY	98657	Q9	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
ENDRIN	UG/G-DRY	98369	Q9	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70
HEXACHLOROCYCLOPENTADIENE	UG/G-DRY	98647	Q9	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
ISODRIN	UG/G-DRY	98649	Q9	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
MALATHION	UG/G-DRY	98648	Q9	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,4 OXATHIANE	UG/G-DRY	98644	Q9	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
ETP-PARATHION	UG/G-DRY	98658	Q9	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
SUPONA	UG/G-DRY	98656	Q9	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
VAPONA	UG/G-DRY	98646	Q9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
DICYCLOPENTADIENE	UG/G-DRY	98651	Q9	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
ETHYLBENZENE	UG/G-DRY	98688	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
METHYLENE CHLORIDE	UG/G-DRY	98689	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TETRACHLOROETHENE	UG/G-DRY	98690	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TOLUENE	UG/G-DRY	98691	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,2-TRICHLOROETHANE	UG/G-DRY	98693	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
TRICHLOROETHENE	UG/G-DRY	98694	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
M-XYLENE	UG/G-DRY	98695	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
MIBK	UG/G-DRY	98696	W9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
DMS	UG/G-DRY	98697	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
BENZENE	UG/G-DRY	98699	W9	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25



06/24/88

ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NAME RMA TASA 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

PROJECT NUMBER 88425 0600

FIELD GROUP 36-7-47

ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	3706A 36-7-47 77	3707A 36-7-47 79	3707B 36-7-47 80	3707C 36-7-47 81	3708A 36-7-47 84	3708B 36-7-47 85	3708C 36-7-47 86	3709A 36-7-47 89	3709B 36-7-47 90	3709C 36-7-47 91	3710A 36-7-47 94	3710B 36-7-47 95	3711A 36-7-47 97	3711B 36-7-47 98	3712A 36-7-47 100
DATE			03/09/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/14/88	03/14/88	03/14/88	03/14/88	03/14/88
TIME			10:10	08:21	08:33	08:46	09:20	09:29	09:46	10:20	10:30	10:47	13:18	13:22	12:49	12:54	13:43
O-AND/OR P-XYLENE		98700				<0.50			<0.50			<0.50					
UG/G-DRY		W9															
CARBON TETRACHLORIDE		98680				<0.25			<0.25			<0.25					
UG/G-DRY		W9															
CHLOROBENZENE		98681				<0.25			<0.25			<0.25					
UG/G-DRY		W9															
CHLOROFORM		98682				<0.25			<0.25			<0.25					
UG/G-DRY		W9															
1,1-DICHLOROETHANE		98683				<0.25			<0.25			<0.25					
UG/G-DRY		W9															
1,2-DICHLOROETHANE		98684				<0.28			<0.28			<0.28					
UG/G-DRY		W9															
BICYCLOHEPTADIENE		98686				<0.25			<0.25			<0.25					
UG/G-DRY		W9															
DBCP (NEMAGON)		98652				<0.33			<0.33			<0.33					
UG/G-DRY		W9															
THIODIGLYCOL		99798															
UG/G		W9															
CHLOROACETIC ACID		97285															
UG/G		W9															
IMPA		97382															
UG/G		AAA9															
FLUOROACETIC ACID		97381															
UG/G		AAA9															
MPA		97383															
UG/G		AAA9															
UNK587		90587															
UG/G		Q9															
UNK588		90588															
UG/G		Q9															
UNK593		90593															
UG/G		Q9															
UNK602		90602															
UG/G		Q9															
UNK524		90524															
UG/G		Q9															
UNK549		90549															
UG/G		Q9															
UNK554		90554															
UG/G		Q9															
UNK558		90558															
UG/G		Q9															
UNK566		90566															
UG/G		Q9															
UNK586		90586															
UG/G		Q9															
UNK598		90598															
UG/G		Q9															

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## ENVIRONMENTAL SCIENCE &amp; ENGINEERING 06/24/88

PROJECT NUMBER 88425 0000  
FIELD GROUP 36-7-47  
ALL  
PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

DATE	TIME	PARAMETERS	UNITS	STORET #	METHOD	3706A 36-7-47 77	3707A 36-7-47 79	3707B 36-7-47 80	3707C 36-7-47 81	3708A 36-7-47 84	3708B 36-7-47 85	3708C 36-7-47 86	3709A 36-7-47 89	3709B 36-7-47 90	3709C 36-7-47 91	3710A 36-7-47 94	3710B 36-7-47 95	3711A 36-7-47 97	3711B 36-7-47 98	3712A 36-7-47 100
				03/09/88		03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/14/88	03/14/88	03/14/88	03/14/88	03/14/88
				10:10		08:21	08:33	08:46	08:46	09:20	09:29	09:46	10:20	10:30	10:47	13:18	13:22	12:49	12:54	13:43
UNK600			UG/G	90600																
UNK609			UG/G	90609																
UNK618			UG/G	90618																
UNK619			UG/G	90619																
UNK626			UG/G	90626																
UNK631			UG/G	90631																
UNK633			UG/G	90633																
UNK160			UG/G	90160																
UNK615			UG/G	90615																
UNK543			UG/G	90543																
UNK559			UG/G	90559																
UNK573			UG/G	90573																
UNK576			UG/G	90576																
UNK578			UG/G	90578																
UNK622			UG/G	90622																
UNK624			UG/G	90624																
UNK628			UG/G	90628																
UNK632			UG/G	90632																
UNK634			UG/G	90634																
UNK636			UG/G	90636																
UNK640			UG/G	90640																
UNK644			UG/G	90644																
UNK649			UG/G	90649																
UNK655			UG/G	90655																

ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL  
 PROJECT NAME PMA TASK 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

PARAMETERS	UNITS	STORET #	METHOD	3706A 36-7-47 77	3707A 36-7-47 79	3707B 36-7-47 80	3707C 36-7-47 81	3708A 36-7-47 84	3708B 36-7-47 85	3708C 36-7-47 86	3709A 36-7-47 89	3709B 36-7-47 90	3709C 36-7-47 91	3710A 36-7-47 94	3710E 36-7-47 95	3711A 36-7-47 97	3711B 36-7-47 98	3712A 36-7-47 100
DATE				03/09/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/14/88	03/14/88	03/14/88	03/14/88	03/14/88
TIME				10:10	08:21	08:33	08:46	09:20	09:29	09:46	10:20	10:30	10:47	12:18	13:22	12:49	12:54	13:43
UNK577	UG/G		90577															
UNK594	UG/G		90594															
UNK629	UG/G		90629															
UNK630	UG/G		90630															
UNK637	UG/G		90637															
UNK555	UG/G		90555															
UNK556	UG/G		90556															
UNK582	UG/G		90582															
UNK617	UG/G		90617															
UNK161	UG/G		90161															
UNK541	UG/G		90541															
UNK551	UG/G		90551															
UNK591	UG/G		90591															
UNK595	UG/G		90595															
UNK518	UG/G		90518															
UNK661	UG/G		90661															
UNK523	UG/G		90523															
UNK616	UG/G		90616															
UNK673	UG/G		90673															
UNK550	UG/G		90550															
UNK572	UG/G		90572															
UNK627	UG/G		90627															
UNK526	UG/G		90526															
UNK614	UG/G		90614															

06/24/88

## ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL

PROJECT NAME RMA TAJA 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICK

## SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	3706A	3707A	3707B	3707C	3708A	3708B	3708C	3709A	3709B	3709C	3710A	3710B	3711A	3711B	3712A
DATE				03/09/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/10/88	03/14/88	03/14/88	03/14/88	03/14/88	03/14/88
TIME				10:10	08:21	08:33	08:46	09:20	09:29	09:46	10:20	10:30	10:47	13:18	13:22	12:49	12:54	13:43

90635

UG/G

UNK635

Q9

ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL  
 PROJECT NAME RMA TASK 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRICKA

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	3712B 36-7-47 METHOD 101	3688A 36-7-47 103	3688B 36-7-47 104
DATE			03/14/88	03/16/88	03/16/88
TIME			13:46	09:40	09:51
SAMPLE TYPE		71999	SO	SO	SO
SITE TYPE 1		0			
SAMPLE DEPTH		99759	BORE	BORE	BORE
FT		0			
SAMPLE DEPTH		99758	2	9	13
FT		0			
SAMPLING TECHNIQUE		72005	S	S	S
INSTALLATION CODE		0			
SAMPLE		99720	RK	RK	RK
MOISTURE		70320	5.6	15.6	21.6
%WET WT		1			
CADMIUM		1028	<0.921	<0.921	<0.921
UG/G- DRY		R9			
CHROMIUM		99584	11.3	<7.16	<7.16
UG/G- DRY		R9			
COPPER		1043	9.00	11.4	40.5
UG/G- DRY		R9			
LEAD		1052	<16.8	<16.8	<16.8
UG/G- DRY		R9			
ZINC		1093	40.1	38.7	77.8
UG/G- DRY		R9			
ARSENIC		1003	<4.70	<4.70	<4.70
UG/G- DRY		T9			
MERCURY		71921	0.125	<0.050	<0.050
UG/G- DRY		V9			
ALDRIN		98356	<0.94	<0.94	<0.94
UG/G- DRY		O9			
ATRAZINE		98655	<0.73	<0.73	<0.73
UG/G- DRY		O9			
CHLORDANE		98361	<1.5	<1.5	<1.5
UG/G- DRY		O9			
P-CLPHENYLMETHY-		98653	<0.25	<0.25	<0.25
SULFIDE UG/G- DRY		O9			
P-CLPHENYLMETHY-		98654	<0.35	<0.35	<0.35
SULFOXIDE UG/G- DRY		O9			
P-CLPHENYLMETHY-		98703	<0.29	<0.29	<0.29
SULFONE UG/G- DRY		O9			
DBCP(NEMAGON)		98652	<0.33	<0.33	<0.33
UG/G- DRY		O9			
DICYCLOPENTADIENE		98651	<0.26	<0.26	<0.26
UG/G- DRY		O9			
DDE, PP		98363	<0.29	<0.29	<0.29
UG/G- DRY		O9			
DDT, PP		98364	<0.37	<0.37	<0.37
UG/G- DRY		O9			
DIELDRIN		98365	<0.25	<0.25	<0.25
UG/G- DRY		O9			

06/24/88  
PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 88425 0000  
FIELD GROUP 36-7-47  
ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	37128 36-7-47 101	3688A 36-7-47 103	3688B 36-7-47 104
DATE			03/14/88	03/16/88	03/16/88
TIME			13:46	09:40	09:51
DIMP		98645		<0.50	<0.50
1,4 DITHIANE	UG/G-DRY	Q9			
		98650		<0.25	<0.25
DMHP	UG/G-DRY	Q9			
		98657		<1.5	<1.5
ENDRIN	UG/G-DRY	Q9			
		98369		<0.70	<0.70
HEXACHLOROCYCLOPENT-ADIENCE	UG/G-DRY	Q9			
		98647		<1.1	<1.1
ISODRIN	UG/G-DRY	Q9			
		98649		<0.33	<0.33
MALATHION	UG/G-DRY	Q9			
		98648		<0.59	<0.59
1,4 OXATHIANE	UG/G-DRY	Q9			
		98644		<0.26	<0.26
ETY*PARATHION	UG/G-DRY	Q9			
		98658		<0.63	<0.63
SUPONA	UG/G-DRY	Q9			
		98656		<0.49	<0.49
VAPONA	UG/G-DRY	Q9			
		98646		<0.25	<0.25
DICYCLOPENTADIENE	UG/G-DRY	Q9			
		98651		<0.27	<0.27
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	W9			
		98687		<0.25	<0.25
ETHYLBENZENE	UG/G-DRY	W9			
		98688		<0.25	<0.25
METHYLENE CHLORIDE	UG/G-DRY	W9			
		98689		0.63	0.63
TETRACHLOROETHENE	UG/G-DRY	W9			
		98690		<0.25	<0.25
TOLUENE	UG/G-DRY	W9			
		98691		<0.25	<0.25
1,1,1-TRICHLOROETHANE	UG/G-DRY	W9			
		98692		<0.25	<0.25
1,1,2-TRICHLOROETHANE	UG/G-DRY	W9			
		98693		<0.25	<0.25
TRICHLOROETHENE	UG/G-DRY	W9			
		98694		<0.25	<0.25
M-XYLENE	UG/G-DRY	W9			
		98695		<0.25	<0.25
HIBK	UG/G-DRY	W9			
		98696		<0.50	<0.50
DMDS	UG/G-DRY	W9			
		98697		<0.25	<0.25
BENZENE	UG/G-DRY	W9			
		98699		<0.25	<0.25

ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88 PROJECT NAME RMA TASK 47/1  
 PROJECT NUMBER 88425 0000 PROJECT MANAGER BILL FRASER  
 FIELD GROUP 36-7-47 LAB COORDINATOR JOE VONDRICKA  
 ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	37128 36-7-47 METHOD	3688A 36-7-47 103	3688B 36-7-47 104
DATE			03/14/88	03/16/88	03/16/88
TIME			13:46	09:40	09:51
UNK577	UG/G	90577			
UNK594	UG/G	90594			
UNK629	UG/G	90629		20	
UNK630	UG/G	90630		200	
UNK637	UG/G	90637			
UNK555	UG/G	90555			
UNK556	UG/G	90556			
UNK582	UG/G	90582			
UNK617	UG/G	90617			
UNK161	UG/G	90161			
UNK541	UG/G	90541			
UNK551	UG/G	90551			
UNK591	UG/G	90591			
UNK595	UG/G	90595			
UNK518	UG/G	90518			
UNK661	UG/G	90661			
UNK523	UG/G	90523			
UNK616	UG/G	90616			
UNK673	UG/G	90673			
UNK550	UG/G	90550		8	
UNK572	UG/G	90572		40	
UNK627	UG/G	90627		400	
UNK526	UG/G	90526			
UNK614	UG/G	90614			0.9

PAGE#30

06/24/88  
PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 88425 UN000  
FIELD GROUP 36-7-47  
ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	37128	3683A	3688B
DATE				36-7-47	36-7-47	36-7-47
TIME				101	103	104
				03/14/88	03/16/88	03/16/88
				13:46	09:40	09:51

UNK635 UG/G 90635 Q9



PARAMETERS	UNITS	STORET #	BLK TIMB 488	BLK T2IMB2 2	BLK T47MB1 1	BLK T47MB1 6	BLK T47MB1 7	BLK T47MB1 8	BLK T2IMB2 5	BLK T47MB1 21	BLK T47MB1 26	BLK T47MB1 28	BLK T47MB1 29	BLK TIMB 542	BLK T47MB1 41	BLK T47MB1 48	BLK T47MB1 49
DATE	TIME		10/27/87	03/11/88	02/02/88	03/09/88	02/12/88	03/10/88	03/16/88	02/03/88	03/09/88	03/15/88	03/10/88	01/26/88	02/04/88	03/09/88	03/09/88
SAMPLE TYPE		71999	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SITE TYPE 1		99759	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB	QCHB
SAMPLE DEPTH	FT	99758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAMPLING TECHNIQUE		72005	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
INSTALLATION CODE		99720	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK	RK
MOISTURE		70320	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
CADMIUM		1028	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921
CHROMIUM	UG/G- DRY	99584	12.1	14.3	10.4	9.99	<7.16	12.8									
COPPER	UG/G- DRY	1043	9.56	10.6	10.1	10.1	8.20	9.76									
LEAD	UG/G- DRY	1052	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8									
ZINC	UG/G- DRY	1093	41.7	40.9	39.3	33.3	29.6	35.0									
ARSENIC	UG/G- DRY	1003							<4.70	5.59	<4.70	<4.70	<4.70	<0.050	<0.050	<0.050	<0.050
MERCURY	UG/G- DRY	71921															
THIODIGLYCOL	UG/G	99798															
CHLOROACETIC ACID	UG/G	97285															

ENVIRONMENTAL SCIENCE & ENGINEERING 06/28/88  
 PROJECT NUMBER 84936 0300 PROJECT NAME RMA TASK I  
 FIELD GROUP TIMB PROJECT MANAGER  
 ALL LAB COORDINATOR JOE VONDRICK

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	BLK T47MB1	BLK T47MB1
DATE			50	61
TIME			03/16/88	02/02/88
SAMPLE TYPE		71999	SO	SO
SITE TYPE I		0		
SAMPLE DEPTH		99759	QCHB	QCHB
CM		0		
SAMPLING TECHNIQUE		99758	0	0
		0		
INSTALLATION CODE		72005	G	G
SAMPLE		99720	RK	RK
MOISTURE		70320	2.4	2.4
%WET WT		0		
CADMIUM		1028		
UG/G- DRY		R9		
CHROMIUM		99584		
UG/G- DRY		R9		
COPPER		1043		
UG/G- DRY		R9		
LEAD		1052		
UG/G- DRY		R9		
ZINC		1093		
UG/G- DRY		R9		
ARSENIC		1003		
UG/G- DRY		T9		
MERCURY		71921	<0.050	
UG/G- DRY		V9		
THIODIGLYCOL		99798		<2.55
UG/G		MM9		
CHLOROACETIC ACID		97285		<18.0
UG/G		MM9		



ENVIRONMENTAL SCIENCE & ENGINEERING 06/28/88  
 PROJECT NUMBER 88425 0000 PROJECT NAME RMA TASK 47  
 FIELD GROUP T47MB1 PROJECT MANAGER  
 ALL LAB COORDINATOR JOE VONDRICK

SAMPLE ID/#

PARAMETERS	STORET #	BLK T47MB1	BLK T47MB1	BLK T47MB1	BLK T47MB1
UNITS	METHOD	227	228	229	230
DATE		03/10/88	03/14/88	03/15/88	03/16/88
TIME					
SAMPLE TYPE	71999	SO	SO	SO	SO
SITE TYPE I	99759	QCHB	QCHB	QCHB	QCHB
SAMPLE DEPTH	99758	0	0	0	0
FT	0				
SAMPLING TECHNIQUE	72005	G	G	G	G
INSTALLATION CODE	99720	RK	RK	RK	RK
SAMPLE	70320	2.4	2.4	2.4	2.4
MOISTURE	0				
\$MET WT	0				
DICYPENTADIENE	98651	<0.27	<0.27	<0.27	<0.27
UG/G-DRY	H9				
TRANS-1,2-DICHLOROET	98687	<0.25	<0.25	<0.25	<0.25
HENE	H9				
UG/G-DRY	98688	<0.25	<0.25	<0.25	<0.25
ETHYLBENZENE	H9				
UG/G-DRY	98689	0.94	0.99	0.40	<0.25
METHYLENE CHLORIDE	H9				
UG/G-DRY	98690	<0.25	<0.25	<0.25	<0.25
TETRACHLOROETHENE	H9				
UG/G-DRY	98691	<0.25	<0.25	<0.25	<0.25
TOLUENE	H9				
UG/G-DRY	98692	<0.25	<0.25	<0.25	<0.25
1,1,1-TRICHLORO-	H9				
ETHANE	98693	<0.25	<0.25	<0.25	<0.25
UG/G-DRY	H9				
1,1,2-TRICHLORO-	98694	<0.25	<0.25	<0.25	<0.25
ETHANE	H9				
UG/G-DRY	98695	<0.25	<0.25	<0.25	<0.25
TRICHLOROETHENE	H9				
UG/G-DRY	98696	<0.50	<0.50	<0.50	<0.50
M-XYLENE	H9				
UG/G-DRY	98697	<0.25	<0.25	<0.25	<0.25
MIBK	H9				
UG/G-DRY	98699	<0.25	<0.25	<0.25	<0.25
DMS	H9				
UG/G-DRY	98700	<0.50	<0.50	<0.50	<0.50
BENZENE	H9				
UG/G-DRY	98680	<0.25	<0.25	<0.25	<0.25
O-AND/OR P-XYLENE	H9				
UG/G-DRY	98681	<0.25	<0.25	<0.25	<0.25
CARBON TETRACHLORIDE	H9				
UG/G-DRY	98682	<0.25	<0.25	<0.25	<0.25
CHLOROBENZENE	H9				
UG/G-DRY	98683	<0.25	<0.25	<0.25	<0.25
CHLOROFORM	H9				
UG/G-DRY	98684	<0.25	<0.25	<0.25	<0.25
1,1-DICHLOROETHANE	H9				
UG/G-DRY	98685	<0.25	<0.25	<0.25	<0.25

ENVIRONMENTAL SCIENCE & ENGINEERING  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP T47MB1  
 ALL

06/28/88  
 PROJECT NAME RMA TASK 47  
 PROJECT MANAGER  
 LAB COORDINATOR JOE VONDRICK

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	BLK T47MB1 227	BLK T47MB1 228	BLK T47MB1 229	BLK T47MB1 230	DATE TIME
1,2-DICHLOROETHANE		98684	<0.28	<0.28	<0.28	<0.28	03/10/88
UG/G-DRY		W9					03/14/88
BICYCLOHEPTADIENE		98686	<0.25	<0.25	<0.25	<0.25	03/15/88
UG/G-DRY		W9					03/16/88
DBCP (NEMAGON)		98652	<0.33	<0.33	<0.33	<0.33	
UG/G-DRY		W9					
UNK160		90160	10				
UG/G		W9					
UNK159		90159		5	100	5	
UG/G		W9					